CHAPTER 10
APPENDICES
MASTER PLAN UPDATE

Nogales International Airport
Santa Cruz County

April 2002

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Glossary

AIR CARRIER - A commercial operator engaging in the carriage of persons or property in air commerce for compensation or hire. Air carriers are certificated in accordance with FAR Parts 121 and 127, and generally operate aircraft having a seating capacity of more than 30 passengers or a maximum payload capacity of more than 7,500 pounds.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC) - A facility established to provide positive air traffic control service to aircraft operating on IFR flight plans within controlled airspace. Controls only traffic en route between airports.

AIR TAXI - Schedule and/or nonscheduled aircraft operations carrying passengers and/or cargo for compensation. The capacity of air taxi aircraft is limited by Part 135 of the Federal Aviation Regulations.

AIR TRAFFIC - Aircraft operating in the air or on an airport surface, excluding loading ramps and parking areas.

AIRCRAFT APPROACH CATEGORY - A grouping of aircraft based on a speed of 1.3 times the stall speed in the landing configuration at maximum gross landing weight. An aircraft shall fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimum for the next higher category should be used. The categories are as follows:

Category A - Speed less than 91 knots.
Category B - Speed 91 knots or more but less than 121 knots.
Category C - Speed 121 knots or more but less than 141 knots.
Category D - Speed 141 knots or more but less than 166 knots.
Category E - Speed 166 knots or more.

AIRCRAFT MIX - The number of aircraft movements categorized by capacity group or operational group, and specified as a percentage of the total aircraft movements.

AIRCRAFT OPERATION - An aircraft takeoff or landing.

AIRPLANE DESIGN GROUP (PHYSICAL CHARACTERISTICS) - The airplane design group subdivides airplanes by wingspan. The airplane design group concept links an airport's dimensional standards to aircraft approach categories or to airplane design groups or to runway instrumentation configurations. The airplane design groups are:

1. **Airplane Design Group I:** Wingspan up to but not including 49 feet.
2. **Airplane Design Group II:** Wingspan 49 feet up to but not including 79 feet.
3. **Airplane Design Group III:** Wingspan 79 feet up to but not including 118 feet.
4. **Airplane Design Group IV:** Wingspan 118 feet up to but not including 171 feet.
5. **Airplane Design Group V:** Wingspan 171 feet up to but not including 197 feet.
6. **Airplane Design Group VI:** Wingspan 197 feet up to but not including 262 feet.

AIRPORT CLASSIFICATIONS – There are four aviation facility classifications used by the FAA and the Arizona Department of Transportation. The first classification system utilizes the system in the National Plan of Integrated Airport Systems (NPIAS). The second system is used by the FAA to relate airport design criteria to the operational and physical characteristics of the airplanes. The third is a hierarchical classification used by the ADOT Aeronautics Division. The fourth was developed by ADOT based on FAA airport classification categories.

NPIAS Classifications:

- Primary Service (PR) – Primary Service airports are public use airports receiving scheduled airline passenger service which also enplane 10,000 or more passengers per year.
- Commercial Service (CM) – Commercial Service airports are public use airports which receive scheduled airline passenger service and which annually enplane 2,500 or more.
- General Aviation (GA) – General Aviation airports are either publicly or privately owned public use airports which serve general aviation users.
- Reliever (RL) – Reliever airports are general aviation or commercial service airports which have the function of relieving congestion at a Primary Service airport.

ADOT Classifications:

- Primary system airports must be open to the public and meet at least one of the following criteria:
  - Have 10 or more based aircraft and/or 2,000 or more yearly operations; or
  - Have scheduled air carrier service; or
  - Receive commuter service regularly; or
  - Are projected to meet any of the above criteria within 10 years.
- Secondary airports is one that satisfies both following criteria: (1) recognized by the FAA as an airport per Form 5010 and (2) open to the public.
- Emerging Rural Airports are airport facilities that do not meet requirements of either the Primary or Secondary systems of airports, but exist in areas that are not adequately served by aviation facilities or have demonstrated a need for such facilities, or have not been registered with the FAA.

ADOT/FAA Classifications:

- New/Emerging: This category accommodates areas within the State of Arizona that demonstrate a need for an airport with minimum design standards to be utilized for general aviation, recreation, and/or emergency services.
- Basic Utility – Stage I – This type of airport serves about 75% or the single-engine and small twin-engine airplanes used for personal and business purposes. Precision approach operations are not usually anticipated.
- Basic Utility – Stage II – This type of airport serves all the airplanes in Stage I, plus some small business and air taxi-type twin-engine airplanes. Precision approach operations are not usually anticipated.
- General Utility – Stage I – This type of airport serves all small airplanes. Precision approach operations are not usually anticipated. This airport is also designed for small airplanes in Airplane Design Group I.
- General Utility – Stage II – This type of airport serves large airplanes in Aircraft approach Category A and B and usually has the capability for precision approach operations. This airport is normally designed for Airplane Design Groups I and II. It may also be designed to serve Aircraft Approach Category A large airplanes in Airplane Design Group III.
- Commercial Service – An airport with regularly scheduled airline service.

AIRPORT ELEVATION/FIELD ELEVATION - The highest point of an airport's runways measured in feet from mean sea level.

AIRPORT LAYOUT PLAN (ALP) - A graphic presentation, to scale, of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to show conformance with applicable standards. To be eligible for AIP funding assistance, an airport must have an FAA-approved Airport Layout Plan.

AIRPORT LIGHTING - Various lighting aids that may be installed on an airport. Types of airport lighting include:

1. **Approach Light System/ALS:** An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns with the extended centerline of the runway on his final approach for landing.

   Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with ALS at some airports. Types of Approach Light Systems are:

   a) ALSF-I: Approach Light System with Sequenced Flashing Lights in ILS Cat-I configuration.
   b) ALSF-II: Approach Light System with Sequenced Flashing Lights in ILS Cat-II configuration.
   c) SSALF: Simplified Short Approach Light System with Sequenced Flashing Lights.
   d) SSALR: Simplified Short Approach Light System with Runway Alignment Indicator Lights.
   e) MALSF: Medium Intensity Approach Light System with Sequenced Flashing Lights.
   f) MALSR: Medium Intensity Approach Light System with Runway Alignment Indicator Lights.
   g) LDIN: Sequenced Flashing Lead-in Lights.
   h) RAIL: Runway Alignment Indicator Lights (Sequenced Flashing Lights which are installed only in combination with other light systems).
   i) ODALS: Omnidirectional Approach Lighting System consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway.
2. **Runway Lights/Runway Edge Lights:** Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.
3. **Touchdown Zone Lighting:** Two rows of transverse light bars located symmetrically about the runway centerline normally at 100-foot intervals. The basic system extends 3,000 feet along the runway.
4. **Runway Centerline Lighting:** Flush centerline lights spaced at 50-foot intervals beginning 75 feet from the landing threshold and extending to within 75 feet of the opposite end of the runway.

5. **Threshold Lights:** Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.
6. **Runway End Identifier Lights/REIL:** Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.
7. **Visual Approach Slope Indicator/VASI:** An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red.
8. **Precision Approach Path Indicator/PAPI:** (same function and description as for VASI but different configuration).
9. **Boundary Lights:** Lights defining the perimeter of an airport or landing area.

AIRPORT MASTER PLAN - An assembly of appropriate documents and drawings covering the development of a specific airport from a physical, economical, social, and political jurisdictional perspective. The airport layout plan is a part of this plan.

AIRPORT NOISE ABATEMENT PROGRAM - A program designed to mitigate noise impacts around an airport through changes in the manner in which aircraft are flown, or changes in the operation or layout of the airport.

AIRPORT OVERLAY ZONE - A zone intended to place additional land use conditions on land impacted by the airport while retaining the existing underlying zone.

AIRPORT REFERENCE CODE (ARC) - A coding system of aircraft approach speed and wingspan used to related to operational and physical airport design standards.

AIRPORT REFERENCE POINT (ARP) - An ARIP is a point having equal relationship to all existing and proposed landing and takeoff areas which is used to locate the airport geographically.

AIRPORT RESCUE AND FIRE FIGHTING (ARFF) - Airport rescue and fire fighting facilities, including vehicles, personnel, and buildings.

AIRPORT ROTATING BEACON - A visual NAVAID operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport.

AIRSIDE - Portion of the airport directly related to the arrival and departure of aircraft, including such airfield facilities as runways, taxiways, navigational aids, marking, and lighting. (See LANDSIDE).

AIRSPACE - Space above the ground in which aircraft travel, divided into corridors, routes, and restricted zones.

AIR TRAFFIC CONTROL TOWER (ATCT) – A facility at an airport operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic within an airport traffic area.

AMBIENT NOISE - All encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far.

ANNUAL SERVICE VOLUME (ASV) - ASV is a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather conditions, etc., that would be encountered over a year's time.

APPROACH AND RPZ PLAN - The Approach and RPZ Plan is compiled from the criteria in FAR Part 77, **Objects Affecting Navigable Airspace**. It shows the area affected by the Airport Obstructions Zoning Ordinance and includes layout of runways, airport boundary, elevations, and area topography. Applicable height limitation areas are shown in detail.

APPROACH SLOPES - The ratios of horizontal to vertical distance indicating the degree of inclination of the Approach Surface. The various ratios include:

20:1	For all utility and visual runways extended from the primary surface a distance of 5,000 feet.
34:1	For all non-precision instrument runways other than utility extended from the primary surface for a distance of 10,000 feet.
50:1/40:1	For all precision instrument runways extending from the primary surface for a distance of 10,000 feet at an approach slope of 50:1 and an additional 40,000 feet beyond this at a 40:1 Approach Slope.

APPROACH SURFACE - An element of the airport imaginary surfaces longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface at a designated slope.

APPROVED INSTRUMENT APPROACH - An instrument approach approved for general use and publication by the FAA. It must meet design, accuracy, and equipment requirements set by the FAA, and is subject to periodic FAA flight checks.

APRON/RAMP - An area designated for aircraft use, other than taxiways and runways. Example uses for an apron include loading and unloading, parking, maintenance, refueling, before take-off engine run up, and as a temporary traffic holding area.

AREA NAVIGATION (RNAV) - A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of a self-contained system capability.

ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) – Arizona Department of Transportation – An agency of the State of Arizona government responsible for planning, design, construction and maintenance of transportation facilities.

AUTOMATIC DIRECTION FINDER (ADF) - An aircraft radio navigation system, which senses and indicates the direction to a Non-Directional radio beacon (NDB), ground transmitter. Direction is indicated to the pilot as a magnetic bearing or as a relative bearing to the aircraft, depending on the type of indicator installed in the aircraft.

AUTOMATED FLIGHT SERVICE STATION (AFSS) - An air traffic facility, which provides pilot briefing and en route communications; receives and processes flight plans; and offers other services to aviators. Some of these services are provided on an automated basis.

AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS) – system of equipment that provides around-the clock, real-time weather information at airports without adequate weather observation personnel. The basic system consists of weather sensors to measure wind speed and direction, temperature, dewpoint, pressure, precipitation, visibility, cloud height, and density altitude.

AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS) – In addition to AWOS data, ASOS provides information on the degree and precipitation (i.e., rain, sleet, snow, freezing rain) received in the observation area.

AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS) - The continuous broadcast of recorded non-control information intended to improve controller effectiveness and relieve frequency congestion by automating the repetitive transmission of essential but routine information.

AVIGATION AND HAZARD EASEMENT - An easement that provides right of flight at any altitude above the approach surface, prevents any obstruction above the approach surface, provides a right to cause noise vibrations, prohibits the creation of electrical interference's and grants right-of-way entry to remove trees or structures above the approach surface.

BASED AIRCRAFT - An aircraft permanently stationed at an airport.

BUILDING RESTRICTION LINE (BRL) - A line shown on the Airport Layout Plan beyond which airport buildings must not be positioned in order to limit their proximity to aircraft movement areas.

CAPACITY - Capacity (throughput capacity) is a measure of the maximum number of aircraft operations, which can be accommodated on the airport component in an hour. Since the capacity of an airport component is independent of the capacity of other airport components, it can be calculated separately.

COMMERICAL SERVICE - Commercial service airports are public-use airports, which receive, scheduled passenger service aircraft and which annually enplane 2,500 or more passengers.

COMMUTER AIR CARRIER - An air carrier, certified in accordance with FAR Part 135, which operates aircraft with a maximum of 60 seats and provides at least five schedule round trips per week between two or more points, or which carries mail.

COMPREHENSIVE PLAN - A set of public decisions dealing with how the land, air, and water resources of an area are to be used. The plan provides for all resources, uses, public facilities, and services in an area. It also incorporates the plans and programs of the various governmental units into a single management tool for the planning area.

CONDITIONAL USE - A land use regulatory procedure in which an applicant must adhere to "standards for approval" as established by local officials. A conditional-use procedure allows extensive public review of any development being considered.

CONTROLLED AIRSPACE - An airspace of defined dimensions which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

a. Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D and Class E airspace.

b. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules and equipment requirements in FAR Part 91 (for specific operating requirements, please refer to FAR Part 91). For IFR operations in any class of controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance. Each Class B, Class C and Class D airspace area designated for an airport contains at least one primary airport around which the airspace is designated (for specific designations and descriptions of the airspace classes, please refer to FAR Part 71).

c. Controlled airspace in the United States is designated as follows:

1. CLASS A: Generally, that airspace from 18,000 feet MSL up to and including FL 600, including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska. Unless otherwise authorized, all persons must operate their aircraft under IFR.

2. CLASS B: Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspace areas resemble upside-down wedding cakes) and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds."

3. CLASS C: Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C area is individually tailored, the airspace usually consists of a surface area within a 5 nautical mile (NM) radius, an outer circle with a 10NM radius that extends from 1,200 feet to 4,000 feet above the airport elevation and an outer area. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. VFR aircraft are only separated from IFR aircraft within the airspace. (See OUTER AREA.)

4. CLASS D: Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC

facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace. No separation services are provided to VFR aircraft.

5. CLASS E: Generally, if the airspace is not Class A, Class B, Class C or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also in this class are Federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska, up to, but not including, 18,000 feet MSL and the airspace above FL 600.

CONVENTIONAL HANGAR - A large building used to store more than one aircraft and/or to conduct aircraft maintenance.

CRITICAL AIRCRAFT - In airport design, the aircraft which controls one or more design items such as runway length, pavement strength, lateral separation, etc., for a particular airport. The same aircraft may not be critical to all design items.

CROSSWIND RUNWAY - A runway additional to the primary runway to provide for wind coverage not adequately provided by the primary runway.

DECISION HEIGHT (DH) - With respect to the operation of aircraft, DH means the height at which a decision must be during an ILS instrument approach to either continue the approach or to execute a missed approach.

DEPENDENT VARIABLE - The variable that is of interest to the researcher, the variable that is not forecast. In regression analysis, the variable on the left-hand side of the equation.

DISPLACED THRESHOLD - A threshold located at a point on the runway other than at the runway end. Except for the approach standards defined in FAR Part 77, approach surfaces are associated with the threshold location.

DISTANCE MEASURING EQUIPMENT (DME) - A navigation ground station capable of receiving interrogations from aircraft and transmitting signals which allow time, speed, and distance computations to be made. The station is usually sited with VOR and, at times, an ILS.

EASEMENT - The legal right held by one party to make use of the land of another for a limited purpose.

ECONOMETRIC METHODS - Regression correlation techniques applied to a great variety of forecasting problems to ascertain the relationships between the dependent variables and such explanatory and logically relevant economic variables as income, demographic variables such as population, and other market factors, such as usage impedance and intermodal competition. (See Regression Equation).

ENVIRONMENTAL ASSESSMENT (EA) - A concise public document, prepared under the guidelines of the **National Environmental Policy Act of 1969**, and for which a federal agency is responsible that serves to:

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
2. Aid an agency's compliance with the Act when no environmental impact statement is necessary.
3. Facilitate preparation of a statement when one is necessary.

It includes brief discussions of the need for the proposal, of alternatives as required, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

ESSENTIAL AIR SERVICE – As one of goals of airline deregulation where the government guarantees air service to small communities and provided subsidies where necessary.

FEDERAL AVIATION ADMINISTRATION AIRPORT IMPROVEMENT PROGRAM (AIP) – A grant-in-aid program funded by the Airport and Airway Trust Fund.

FEDERAL AVIATION REGULATIONS (FAR), PART 36 - FAR Part 36 contains noise certifications standards for most airplane types, generally requiring newly designed and manufactured aircraft to be significantly quieter than older aircraft.

FEDERAL AVIATION REGULATIONS (FAR), PART 77 - Part 77, *Objects Affecting Navigable Airspace*, establishes standards for determining obstructions to navigable airspace.

FEDERAL AVIATION REGULATIONS (FAR), PART 150 - Implements portions of Title I of the *Aviation Safety and Noise Abatement Act*. It specifically establishes a single system for the measurement of airport (and background) noise, a single system for determining the exposure of individuals to airport noise, and a standardized airport noise compatibility planning program.

FIXED BASE OPERATOR (FBO) - A private firm providing airport services such as fuel sales, aircraft maintenance, aircraft rental, and flight instruction.

FLIGHT SERVICE STATION (FSS) - A facility operated by the FAA to provide flight service assistance.

GENERAL AVIATION (GA) - The portion of civil aviation which includes all facets of aviation except scheduled air carriers falls into four (4) major categories:

1. Business: The use of an aircraft for executive or business transportation. This category consists of aircraft used by an organization and operated by professional pilots to transport its employees and property (not for compensation of hire); and aircraft used by an individual for transportation required for business.
2. Commercial: The use of an aircraft for commercial purposes (other than the commuter and air carrier), including: air taxi, aerial application, special industrial usage, aerial surveys, advertising, aerial photography, and emergency medical transportation.
3. Instructional: The use of an aircraft for flight training under the supervision of an instructor.
4. Personal: The use of an aircraft for a variety of personal reasons.

GENERAL AVIATION AIRPORT - General Aviation airports are either publicly or privately owned airports which serve general aviation aircraft users.

GLIDE SLOPE (GS) - Provides vertical guidance for aircraft during approach and landing. The glide slope consists of the following:

1. Electric components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as an ILS, or

2. Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS) – A satellite-based navigational system operated by the United States Department of Defense and made available for civilian use for en route navigation, aircraft instrument approaches and other purposes.

HEIGHT ABOVE TOUCHDOWN (HAT) - The height of the decision height or minimum descent altitude above the highest runway elevation in the touchdown zone (first 3,000 feet of the runway). HAT is a published on instrument approach chart in conjunction with all straight-in minimums. (See DECISION HEIGHT, MINIMUM DESCENT ALTITUDE).

HELIPAD - A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

HOLD HARMLESS AGREEMENT - An agreement that holds airport sponsors or jurisdictions harmless from alleged damages resulting from airport operations. Such agreements are recorded in deeds or permits as a condition of approval of a regulatory land-use decision.

IFR CONDITIONS - Weather conditions below the minimum for flight under visual flight rules (VFR).

IMAGINARY SURFACES - Those areas established in relation to the airport and to each runway consistent with FAR Part 77 in which any object extending above these imaginary surfaces is, by definition, an obstruction.

INDEPENDENT VARIABLE - An indicator on the basis of which the dependent variable is projected. The Independent Variable may or may not cause the interval change in a dependent variable with which it is associated.

INSTRUMENT APPROACH - The act of making an approach to an airport solely by reference to instruments. To be counted in FAA statistics as an instrument approach, the aircraft must descend through clouds at some interval from the initial approach fix to the airport.

INSTRUMENT APPROACH AID - Any of several FAA-approved electronic aids designed to provide guidance to pilots making instrument approaches.

INSTRUMENT FLIGHT RULES (IFR) - Rules governing the procedures for conducting instrument flight. Pilots are required to follow these rules when operating in controlled airspace with a visibility of less than three miles and/or a ceiling lower than 1,000 feet.

INSTRUMENT LANDING SYSTEM (ILS) - The instrument landing system is designed to provide electronic instrument guidance to the pilot to permit exact alignment and angle of descent of a properly equipped aircraft on final approach for landing.

INSTRUMENT OPERATION - A takeoff or landing of an aircraft which has an instrument flight clearance.

INTEGRATED NOISE MODEL (INM) - The FAA's Integrated Noise Model is the standard prediction analysis tool to which all computer-based airport noise exposure models are compared. The INM calculates the total impact of aircraft noise at or around airports. This noise exposure level can be presented in contours of equal noise exposure of any one of the following noise measures. Noise Exposure Forecast (NEF), Equivalent Sound Level (Leq), Day-Night Average Sound Level and Community Noise Equivalent Level (CNEL); however, only the DNL is approved for use with FAR Part 150.

ITINERANT OPERATIONS - All operations at an airport which are not local operations. (See LOCAL OPERATIONS).

LANDING GEAR - That part of an aircraft which is required for landing. Gear may be configured as Single-Wheel Gear (SWG or SW), Dual-Wheel Gear (DWG or DW), or Dual-Tandem-Wheel Gear (DTWG or DTW).

LANDSIDE - Portions of the airport interfacing with or supporting the airfield functions, including such facilities as terminal area buildings, aircraft parking apron, automobile parking area, fuel storage, air cargo, and ground access. (See AIRSIDE).

LAND USE - The present or planned utilization of a given parcel of land. Such land uses are normally indicated or delineated on a land-use map. Land-use maps may indicate usage's for any given time period past, present, or future, and such period should always be indicated.

LARGE AIRCRAFT - Aircraft of more than 12,500 pounds maximum certified takeoff weight.

LIGHTING AND MARKING OF HAZARDS TO AIR NAVIGATION - Installation of appropriate lighting fixtures, painted markings, or other devices to such objects or structures that constitute hazards to air navigation.

LIMITED AVIGATION EASEMENT - An easement which provides right of flight above approach slope surfaces, prohibits any obstruction penetrating the approach slope surface, and provides right of entry to remove any structure or growth penetrating the approach slope surface.

LOCAL OPERATIONS - Operations by aircraft flying in the traffic pattern or within sight of the control tower, aircraft known to be arriving or departing from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.

LOCALIZER - The component of an ILS that provides course guidance to the runway.

LORAN - An electronic navigational system by which hyperbolic lines of position are determined by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters.

LOW INTENSITY RUNWAY LIGHTS (LIRL) - runway edge lighting used to define the lateral limits of a taxiway. The intensity of the lights may be present of controlled to high (HITL), medium (MITL) and low (LITL) depending on the category of airport and use of the taxiway.

MARKET SHARE ANALYSIS - Proportions a large-scale activity down to a local level, assuming that the proportion of the large-scale activity, which can be assigned to the local level, is a regular and predictable quantity. Also known as "ratio" or "top-down" modeling, this method is commonly used to develop micro forecasts from the exogenous sources of macro forecasts.

MEAN SEA LEVEL (MSL) – A datum for defining elevations; usually termed mean sea level.

METEROLOGICAL AVIATION REPORT (METAR) – Surface aviation weather observations taken and reported in a standard international format.

MOVEMENT AREA - The runways, taxiways, and other areas of an airport/heliport which are utilized for taxiing/hover taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.

MICROWAVE LANDING SYSTEM (MLS) - An advanced form of precision approach equipment with improved accuracy and fewer siting problems than current ILS. An MLS also can permit curved path approaches to the runway instead of requiring a straight path as an ILS and PAR do.

MILITARY OPERATING AREA (MOA) - A MOA is airspace established outside of Class A airspace area to separate or segregate certain non-hazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.

MINIMUM DESCENT ALTITUDE (MDA) - The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide is provided. (See NONPRECISION APPROACH PROCEDURE).

MISSED APPROACH - A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The routes of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure. It is also a term used by the pilot to inform ATC that he is executing the missed approach. At locations where ATC radar service is provided, the pilot should conform to radar vectors, when provided by ATC, in lieu of the published missed approach procedure.

MULTI-ENGINE AIRCRAFT - Reciprocating-powered, fixed-wing aircraft having more than one engine and categorized as weighing more than or less than 12,500 pounds maximum gross weight.

MULTIPLE REGRESSION - regression model with more than one independent variable. (See REGRESSION EQUATION).

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) – An agency of the U.S. Department of Commerce responsible for the collection of weather data and its translation into products and services.

NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS (NPIAS) - A plan prepared annually by the FAA which identifies, for the Congress and the public, the composition of a national system of airports together with the airport development necessary to anticipate and meet the present and future needs of civil aeronautics, to meet requirements in support of the national defense, and to meet the special needs of the Postal Service. The plan includes both new facilities and qualitative improvements to existing airports to increase their capacity, safety, technological capability, etc.

NATIONAL WEATHER SERVICE (NWS) – An agency of the U. S. Department of Commerce and a branch of NOAA responsible for providing nationwide meteorological services to the public and nonmilitary government agencies.

NAVIGATIONAL AID (NAVAID) - Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight.

NOISE CONTOURS - A noise impact boundary line connecting places on a map where the level of sound is the same. Some of the terminology and methods used in developing noise contours include:

1. **A-Weighted Sound Level (DBA):** Commonly used sound measurement, which approximates the manner in which the human ear responds to sounds.
2. **Composite Noise Rating (CNR):** A measure, taken over a 24-hour period, of the noise environment produced by aircraft operations. The CNR is calculated from aircraft noise and is expressed in terms of the maximum perceived noise level (PNL) and the number of operations in daytime and nighttime periods.
3. **Day-Night Average Sound Level (DNL):** Equivalent noise level produced by airport/aircraft operations during a 24-hour time period, with a 10-decibel penalty applied to the level measured during the nighttime hours of 10pm to 7am.
4. **Equivalent Sound Level (Leq): The** constant sound levels which, in a given situation and time period, conveys the same sound energy, as does the actual time-varying sound in the same period. The equivalent sound level is the same as the average sound level.
5. **Noise Exposure Forecast (NEF): A** measure of the noise environment over a 24-hour period. It is based upon summation of individual noise events over the 24-hour period, with adjustments applied for nighttime noises.

NOISE EXPOSURE AREA/ZONE - An element of the airport impact zone or airport overlay zone used to identify areas sensitive to aircraft noise. Included in the corridor may be:

- Severe Noise Impact (75+)
- Substantial Noise Impact (65-75)
- Moderate Noise Impact (55-65)

NOISE IMPACT - A condition that exists when the noise levels that occur in an area exceed a level identified as appropriate for the activities in that area.

NONDIRECTIONAL BEACON/RADIO BEACON (NDB) - An L/MF or UHF radio beacon transmitting Non-Directional signals whereby the pilot of an aircraft equipped with direction-finding equipment can determine his bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the instrument landing system marker, it is normally called a compass locator.

NONPRECISION APPROACH PROCEDURE/NONPRECISION APPROACH - A standard instrument approach procedure in which no electronic glide slope is provided; e.g., VOR, TACAN, NDB, LOC, LDA, SDF, or ASR.

NONPRECISION INSTRUMENT APPROACH AID - An electronic aid designed to provide an approach path for aligning an aircraft on its final approach to a runway. It lacks the high accuracy of the precision approach equipment and does not provide guidance. The VHF Omnirange (VOR) and the Non-Directional beacon (NDB) are two examples of non-precision instrument equipment.

NONPRECISION INSTRUMENT RUNWAY - A runway having an existing or planned instrument approach procedure from which a straight-in landing is approved but no electronic glide slope information is available and for which no precision approach facilities are planned.

OBJECT FREE AREA (OFA) - A two-dimensional ground area surrounding runways, taxiways, and taxilanes which is clear of objects except for objects whose location is fixed by function.

OBSTACLE FREE ZONE (OFZ) - The airspace defined by the runway OFZ and, as appropriate, the inner-approach OFZ and the inner-transitional OFZ, which is clear of object penetrations other than frangible NAVAIDS (NAVAIDS whose properties allow failure at a specified impact load).

- **Runway OFZ:** The airspace above a surface centered on the runway centerline.
- **Inner-approach OFZ:** The airspace above a surface centered on the extended runway centerline. It applies to runways with an approach lighting system.
- **Inner-transitional OFZ:** The airspace above surfaces located on the outer edges of the runway OFZ and the inner-approach OFZ. It applies to precision instrument runways.

OBSTRUCTION - An object, which penetrates an imaginary surface, described in the FAA's Federal Aviation Regulations (FAR), Part 77.

OBSTRUCTION LIGHTS - Lights, often red and white, mounted on a surface structure or on natural terrain, to warn pilots of an obstruction.

PARALLEL RUNWAYS - Two or more runways at the same airport whose centerlines are parallel. Designated both by runway number and L (left) or R (right), or, if three parallel runways exist, L (left), C (center), and R (right).

PRECISION APPROACH PROCEDURE/PRECISION APPROACH - A standard instrument approach procedure in which an electronic glide slope is provided, e.g., ILS, MLS, and PAR.

PRECISION APPROACH RADAR/PAR - Radar equipment in some ATC facilities operated by the FAA, and/or the military services at joint0use civil/military locations and separate military installations, to detect and display azimuth, elevation, and range of aircraft on the final approach course to a runway. This equipment may be used to monitor certain non-radar approaches, but is primarily used to conduct a precision instrument approach (PAR) wherein the controller issues guidance instructions to the pilot based on the aircraft's position in relation to the final approach course (azimuth), the glide path (elevation), and the distance (range) from the touchdown point on the runway as displayed on the radar scope.

PRECISION INSTRUMENT APPROACH AID - An electronic aid designed to provide an approach path for exact alignment and descent guidance of an aircraft on final approach to a runway. Instrument Landing System (ILS), Precision Approach Radar (PAR), and Microwave Landing System (MLS) are the existing precision NAVAIDS.

PRECISION INSTRUMENT RUNWAY - A runway having an existing or planned instrument approach that is essentially aligned with the runway centerline and that has electronic glide slope information for guidance of the descent of the aircraft to the touchdown point on the runway.

PRIMARY SERVICE AIRPORT - Primary service airports are public-use airports which receive scheduled passenger service aircraft and which annually enplane one one-hundredth percent (0.01%) or more of the combined total domestic passenger enplanements for all United States air carriers.

PRIMARY SURFACE - A primary surface is longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway. When the runway has no specially prepared hard surface, or planned hard surface, the primary surface terminates at each end of the runway. The width of a primary surface ranges from 250 feet to 1,000 feet, depending on the existing or planned approach system. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

r - The correlation coefficient. Measures the degree of association or covariance between the independent and dependent variable. Correlation does not equal causation. (See R^2).

R^2 - The coefficient of determination. Indicates the percentage variation in the dependent variable that is explained by variations in the causal variables.

RADIAL - A magnetic bearing extending from a VOR/VORTAC/TACAN navigational facility.

REGIONAL AIRLINE - An airline providing regularly scheduled passenger or cargo service with aircraft usually seating less than 60 passengers or cargo aircraft with 18,000-pound payload or less. Special provisions, however, enable regional airlines to operate any size aircraft under certain conditions.

REGRESSION EQUATION - A regression equation is the mathematical representation of a regression model. It states that one or more independent variables and a constant term are related to the dependent variable in an additive fashion. The relationship may be linear or one of several curvilinear types.

RELIEVER AIRPORT - Reliever airports are general aviation airports which have the function of relieving congestion at a primary service airport and which provide the general aviation user with an alternate for access to the overall community. Reliever airports receive higher priority for funding assistance than other general aviation airports.

RELOCATED THRESHOLD - A permanent threshold located at the relocated runway end.

ROTATING BEACON - An airport aid allowing pilots the ability to locate an airport while flying under VFR conditions at night.

RUNWAY - A defined rectangular area, on a land airport prepared for the landing and takeoff run of an aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees, e.g., Runway 01, Runway 26. (See PARALLEL RUNWAYS).

RUNWAY GRADIENT (EFFECTIVE) - The average gradient consisting of the difference in elevation of the two ends of the runway divided by the runway length may be used, provided that no intervening point on the runway profile lies more than five feet above or below a straight line joining the two ends of the runway. In excess of five feet, the runway profile will be segmented and aircraft data will be applied for each segment separately.

RUNWAY LENGTH (LANDING) - The measured length from the threshold to the end of the runway.

RUNWAY LENGTH (PHYSICAL) - The actual measured length of the runway.

RUNWAY LENGTH (TAKEOFF) - The measured length from where the takeoff is designed to being to the end of the runway.

RUNWAY LIGHTING SYSTEM - A system of lights running the length of a runway that may be high intensity (HIRL), medium intensity (MIRL), or low intensity (LIRL).

RUNWAY PROTECTION ZONE (RPZ) - An area (formerly the clear zone) used to enhance the safety of aircraft operations. It is at ground level beyond the runway end.

RUNWAY SAFETY AREA (RSA) - A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

SEGMENTED CIRCLE - A system of visual indicators designed to provide traffic pattern information at an airport without an operating control tower.

SIMPLE REGRESSION - Simple regression involves a single independent variable. It assumes a linear relationship between the independent variable and the dependent variable. That relationship is estimated using the method of "least squares" and a set of observed values.

SIMPLIFIED DIRECTIONAL FACILITY (SDF) - A NAVAID used for non-precision instrument approaches. The final approach course is similar to that of an ILS localizer except that the SDF course may be offset from the runway, generally not more than 3 degrees, and the course may be wider than the localizer, resulting in a lower degree of accuracy.

SMALL AIRCRAFT - Aircraft of 12,500 pounds or less, maximum certified takeoff weight.

SPECIAL-USE AIRSPACE - Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special-use airspace included:

1. **Alert Area:** Airspace which may contain a high contain a high volume of pilot training activities or an unusual type of a aerial activity, neither of which is hazardous to aircraft. Alert areas are depicted on aeronautical charts for the information of nonparticipating pilots.
2. **Controlled Firing Area:** Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.
3. **Military Operations Area (MOA):** An MOA is an airspace assignment of defined vertical and lateral dimensions established outside positive control areas to separate/segregate certain military activities from IFR traffic and to identify for VFR traffic where theses activities are conducted.
4. **Prohibited Area:** Designated airspace within which the flight of aircraft is prohibited.
5. **Restricted Area:** Airspace designated under FAR Part 73 within which the flight of aircraft, while not wholly prohibited is subject to restriction. Most restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Restricted areas are depicted on en route charts.
6. **Warning Area:** Airspace, which may contain hazards to nonparticipating aircraft in international airspace.

STANDARD ERROR - A measure of the precision of a coefficient. It tells how reliable the relationship has been measured, the standard deviation for a relationship.

STOPWAY - An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support an airplane during an aborted takeoff without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating an airplane during an aborted takeoff.

T-HANGAR – A T-shaped aircraft hangar that provides shelter for a single plane.

TACTICAL AIR NAVIGATION (TACAN) - An ultra-high frequency electronic air navigation aid which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station. (See VORTAC).

TAXI - The movement of an airplane under its own power on the surface of an airport. Also, it describes the surface movement of helicopters equipped with wheels.

TAXILANE - The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc. A taxilane is outside the movement area.

TAXIWAY - A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft.

TERMINAL AREA - The area used or intended to be used for such facilities as terminal and cargo buildings, gates, hangars, shops, other service buildings, automobile parking, airport motels, restaurants, garages, and automobile service.

TERMINAL RADAR APPROACH CONTROL (TRACON) - An FAA traffic control facility using radar and air/ground communications to provide approach control services to aircraft arriving, departing, or transiting the airspace controlled by the facility. Service may be provided to both civil and military airports. A TRACON is similar to a RAPCON (USAF), RATCF (USN), and ARAC (Army).

TERMINAL RADAR SERVICE AREA (TRSA) - Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. TRSA's are depicted on VFR aeronautical charts. Pilot participation is urged but is not mandatory.

TERMINAL VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION (TVOR) - An electronic navigation aid that provides guidance, both for en route flights on low altitude "Victor" airways and for non-precision approaches. (See also NONPRECISION APPROACH AID).

THRESHOLD - The beginning of that portion of the runway available and suitable for the landing of airplanes.

TIE-DOWN AREA - A parking area for securing aircraft; can be for overnight (transient operator) or permanent use (in lieu of a hangar).

TIME SERIES DATA - Data that examine a decision unit at different points in time. Trend extrapolation examines a historical pattern of activity and assumes that assumes that those factors, which determined the variation in activity level in the past, will continue to exhibit similar relationships in the future.

TOUCH-AND-GO/TOUCH-AND-GO LANDING - An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

TRAFFIC PATTERN - The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

1. **Upwind Leg:** A flight path parallel to the landing runway in the direction of landing.
2. **Crosswind Leg:** A flight path at right angles to the landing runway off its upwind end.
3. **Downwind Leg: A** flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.
4. **Base Leg:** A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.
5. **Final Approach:** A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. An aircraft making a straight-in approach VFR is also considered to be on final approach.

TRANSIENT - Operations or other activity performed by aircraft not based at the airport.

TRANSITIONAL SURFACE - An element of the imaginary surfaces extending outward and upward at right angles to the runway centerline and runway centerline extended at a slope of 7:1 from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces.

ULTRALIGHT VEHICLE - An aeronautical vehicle operated for sport or recreational purposes which does not require FAA registration, an airworthiness certificate, nor pilot certification. They are primarily single-occupant vehicles, although some two-place vehicles are authorized for training purposes. Operation of an ultralight vehicle in certain airspace required authorization from ATC.

UNICOM - A non-government communication facility, which may provided airport information at certain airports. Locations and frequencies of UNICOMS are shown on aeronautical charts and publications.

VISUAL APPROACH RUNWAY - A runway intended for visual approaches only, with no straight-in instrument approach procedure either existing or planned for that runway.

VISUAL DESCENT POINT/VDP - A defined point on the final approach course of a non-precision straight-in approach procedure from which normal descent from the MDA to the runway touchdown point may be commenced, provided the approach threshold of that runway, or approach lights, or other markings identifiable with the approach end of that runway are clearly visible to the pilot.

VISUAL FLIGHT RULES (VFR) - Rules that govern flight procedures under visual conditions. Also indicates a type of flight plan.

VOR/VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION - A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Airspace System. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature. ATC or FSS may use voice features for transmitting instructions/information to pilots. (See Navigational Aid).

VORTAC/VHF OMNIDIRECTIONAL RANGE/TACTICAL AIR NAVIGATION - A navigational aid providing VOR azimuth. TACAN azimuth and TACAN distance measuring equipment (DME) at one site. (See Distance Measuring Equipment, Navigational Aid, TACAN, VOR).

WIDE AREA AUGMENTATION SYSTEM (WAAS) - A system of ground-based facilities providing differential corrections for GPS satellites and intended to support aviation navigation for the en-route, terminal area, non-precision and Category I precision approaches phase of flight.

WIND COVERAGE - The percent of time for which aeronautical operations are considered safe due to acceptable crosswind components.

WIND ROSE - A graphic depiction of historical prevailing wind patterns by speed and direction at a given location. A series of concentric circles cut by radial lines indicates the average percentage of time during the observation period that winds were occurring at successive wind speed groupings and by true direction. Wind rose data are used primarily for determining optimal runway alignment for wind coverage.

ZONING - The demarcation of a jurisdiction by ordinance into zones and the establishment of regulations to govern the use of the land and the location, height, use, and coverage of structures within each zone.

ABBREVIATIONS

AC	-	Advisory Circular
ADF	-	Automatic Direction Finder
ADO	-	Airports District Office (FAA)
AFSS	-	Automated Flight Service Station
AGL	-	Above Ground Level
AIA	-	Airport Influence Area
AIP	-	Airport Improvement Program
ALP	-	Airport Layout Plan
ALS	-	Approach Lighting System
ARC	-	Airport Reference Code
ARP	-	Airport Reference Point
ARSA	-	Airport Radar Service Area
ARFF	-	Airport Rescue and Fire Fighting
ARTCC	-	Air Route Traffic Control Center
ASDA	-	Accelerate-Stop Distance Available
ASNA	-	Aviation Safety and Noise Abatement Act of 1979
ASR	-	Airport Surveillance Radar
ASV	-	Annual Service Volume
ATC	-	Air Traffic Control
ATCT	-	Airport Traffic Control Tower
ASOS	-	Automated Surface Observation System
AWOS	-	Automated Weather Observation System
BRL	-	Building Restriction Line
CAT	-	Category
CWY	-	Clearway
dB	-	Decibel
DME	-	Distance Measuring Equipment
DNL	-	Day-Night Average Sound Level
DOT	-	Department of Transportation
EA	-	Environmental Assessment
EIS	-	Environmental Impact Statement
EPA	-	Environmental Protection Agency
FAA	-	Federal Aviation Administration
FAR	-	Federal Aviation Regulations
FBO	-	Fixed Base Operator
FSS	-	Flight Service Station
GA	-	General Aviation
GPS	-	Global Positioning System
GS	-	Glide Slope
HIRL	-	High-Intensity Runway Lighting
HUD	-	Housing and Urban Development
IFR	-	Instrument Flight Rules
ILS	-	Instrument Landing System
INM	-	Integrated Noise Model
LDA	-	Localizer Directional Aid
LIRL	-	Low-Intensity Runway Lighting
LOC	-	ILS Localizer

ABBREVIATIONS (continued)

MALSF	-	Medium Intensity Approach Lighting System
MALSR	-	MALSF with Runway Alignment Indicator Lights
MDA	-	Minimum Descent Altitude
METAR	-	Meteorological Aviation Report
MIRL	-	Medium Intensity Runway Lighting
MITL	-	Medium Intensity Taxiway Lighting
MLS	-	Microwave Landing System
MOA	-	Military Operating Area
MSL	-	Mean Sea Level
NAVAID	-	Air Navigation Facility/Navigational Aid
NDB	-	Non-directional Beacon
NEPA	-	National Environmental Policy Act of 1969
NPIAS	-	National Plan of Integrated Airport Systems
OAG	-	Official Airline Guide
OC	-	Obstruction Chart
OPBA	-	Operations per Based Aircraft
OFA	-	Object Free Area
OFZ	-	Obstacle Free Zone
PAPI	-	Precision Approach Path Indicator
PLASI	-	Pulsating Light Approach Slope Indicator
RAIL	-	Runway Alignment Indicator Lights
R/R^2	-	Correlation Coefficient/Determination Coefficient
REIL	-	Runway End Identifier Lights
RNAV	-	Area Navigation
RPZ	-	Runway Protection Zone
RVZ	-	Runway Visibility Zone
RWY	-	Runway
SEPA	-	State Environmental Policy Act
STOL	-	Short Takeoff and Landing
TACAN	-	Tactical Air Navigation
TCA	-	Terminal Control Area
TERPS	-	Terminal Instrument Procedures
TRACON	-	Terminal Radar Approach Control
TRSA	-	Terminal Radar Service Area
TVOR	-	Terminal Very High Frequency Omni Range
TXY	-	Taxiway
VASI	-	Visual Approach Slope Indicator
VFR	-	Visual Flight Rules
VMC	-	Visual Meteorological Conditions
VOR	-	Very High Frequency Omni-Directional Range
WAAS	-	Wide Area Augmentation System

Appendix B

Environmental Correspondence

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

U.S. FOREST SERVICE
S.W. Region
Federal Building
517 Gold Avenue S.W.
Albuquerque, NM 87102

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

Dear Sir or Madam::

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings

Environment

Industrial

Transportation

Urban Land

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential environmental impacts associated with the proposed development relative to the U.S. Forest Service's concerns.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj

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United States Department of Agriculture
Forest Service
Coronado National Forest
300 W. Congress St.
Tucson, AZ 85701
Phone: (520) 670-4552
TDD: (520) 670-4584
FAX: (520) 670-4567

File Code: 1920
Date: November 30, 2001

Paul Tober
Project Manager
Stantec Consulting, Incorporated
8211 South 48th Street
Phoenix, AZ 85044

Dear Mr. Tober:

The Coronado National Forest appreciates receiving your scoping request for preparation of the Nogales International Airport Master Plan located in Nogales, Arizona. Your correspondence indicates the proposed Master Plan proposes development to meet the future aviation demand at the airport over the next 20-year planning cycle, including contingency development. My staff reviewed the information in your scoping notice and determined that this project would not conflict with management of lands or resources under the jurisdiction of the Coronado National Forest.

Sincerely,

for JOHN M. McGEE
Forest Supervisor

cc:
District Ranger, Nogales Ranger District
District Ranger, Sierra Vista Ranger District
Program Leader, Natural Resources

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

Ms. Linda Taunt
ADEQ, Hydrologic Support & Assessment
3033 N. Central Ave.
Phoenix, AZ 85012

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport - Nogales, Arizona

Dear Ms. Taunt:

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings

Environment

Industrial

Transportation

Urban Land

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential water quality impacts associated with the proposed development.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.
- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport - Nogales, Arizona

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj

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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Jane Dee Hull
Governor

3033 North Central Avenue • Phoenix, Arizona 85012-2809
(602) 207-2300 • www.adeq.state.az.us

Jacqueline E. Schafer
Director

November 21, 2001

Stantec Consulting Inc.
Attn: Paul Tober, Project Manager
8211 South 48 th Street
Phoenix, Arizona 85044

Subject: **Environmental Review, Proposed Nogales International Airport Development**, Nogales, Santa Cruz County, Arizona

Dear Mr. Tober:

The Arizona Department of Environmental Quality (ADEQ), Water Quality Division has reviewed your November 2, 2001 letter requesting review of the proposed Nogales International Airport Development project.

It appears that the project is currently in a conceptual planning phase, as such it is difficult to address any potential water quality impacts without more detailed information. The project may require a Section 404 Permit from the Corps of Engineers and Section 401 Water Quality Certification if the project impacts waters of the U.S. In addition, activities which disturb 5 acres or are part of a larger development will require an NPDES Stormwater Permit.

Any future questions regarding Section 401 Certification or Stormwater Permits should be addressed to:

Arizona Department of Environmental Qualilty
Federal Permits and Program Development Unit
Attn: Mr. Chris Varga
3033 North Central Avenue
Phoenix, Arizona 85012

Sincerely,

Andrew Cajero-Travers

FPPDU01:0657

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004
(520) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

Ms. Theresa Pella
ADEQ Air Assessment Section
3033 N. Central Ave.
Phoenix, AZ 85012

Reference: Potential environmental impacts relative to proposed airport development - Notales International Airport Master Plan - Nogales, Arizona

Dear Ms. Pella:

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings

Environment

Industrial

Transportation

Urban Land

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential air quality impacts associated with the proposed development.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.

Reference: Potential environmental impacts relative to proposed airport development - Notales International Airport Master Plan - Nogales, Arizona

- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj

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Jane Dee Hull
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

3033 North Central Avenue • Phoenix, Arizona 85012-2809
(602) 207-2300 • www.adeq.state.az.us

Jacqueline E. Schafer
Director

November 30, 2001

Mr. Paul Tober
Stantic Consulting, Inc.
8211 South 48th Street
Phoenix, Arizona 85044

SUBJECT: Comments on the Proposed Airport Development - Nogales International Airport Master Plan

Dear Mr. Tober:

Thank you for your letter of November 2, 2001, letter requesting comments on the proposed Nogales International Airport Master Plan.

The proposed project is located in the Nogales PM_{10} Nonattainment Area. Enclosed is a map of this area for your information (Enclosure 1). Based on the project description and your recent telephone conversation with Andra Juniel of my staff, this project will have to conform to State rule R18-2-1438, General Conformity for Federal Actions, which incorporates by reference subparts 40 CFR 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans (see Enclosure 2). Phases of the project that may qualify as exceptions to the conformity requirements are also cited in 40 CFR 93 and you might want to refer to them to see if the project falls within any of the categories listed.

Based on your information, any increase in traffic associated with this project would be insignificant, so increased particular emissions from traffic would be de minimus.

Although the project is not expected to cause any violations of the PM_{10} national ambient air quality standard, particulate matter (dust) is often a problem associated with the construction of projects of this nature. Consequently, care should be taken to minimize ambient particulate matter levels. The following steps may minimize the amount of particulate matter generated, including incidental emissions caused by strong winds, as well as tracking soil off the construction site by machinery and trucks.

I. Site Preparation
   - A. Minimize land disturbance;
   - B. Use watering trucks to minimize dust;
   - C. Cover trucks when hauling soil;
   - D. Stabilize the surface of soil piles if not removed immediately;

E. Use windbreaks to prevent any accidental dust pollution; and
F. Limit vehicular paths and stabilize temporary roads.

II. Site Construction
A. Cover trucks when transferring materials;
B. Use dust suppressants on traveled paths which are not paved;
C. Minimize unnecessary vehicular and machinery activities; and
D. Minimize soil track-out by washing or cleaning trucks before leaving the construction site.

III. Site Restoration
A. Revegetate any disturbed land not used;
B. Remove unused material;
C. Remove soil piles; and
D. Revegetate all vehicular paths created during construction to avoid future off-road vehicular activities.

Enclosed please find a copy of applicable state rules contained in Arizona Administrative Code R18-2-604, R18-2-605, R18-2-606 and R18-2-607 (Enclosure 3). R18-2-604 through 606 specifically relate to construction and earth moving activities. In addition, please be aware that portable sources such as rock, sand, gravel, and asphalt concrete plants are required to receive permits from the Arizona Department of Environmental Quality. For further information regarding permitting requirements, please contact Eric Massey, Permits Section at (602) 207-2288.

Should you have any further questions, please contact me at (602) 207-2375, or Andra Juniel of my staff at (602) 207-4417.

Sincerely,

Theresa Pella

Theresa Pella, Manager
Air Quality Planning Section

Enclosures (3)

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

U.S. Fish and Wildlife Service
AZ Ecological Services Field Office
2321 W. Royal Palm Rd. Ste 103
Phoenix, AZ 85021-4951

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

Dear Sir or Madam:

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings

Environment

Industrial

Transportation

Urban Land

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential ecological impacts associated with the proposed development.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj

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United States Department of the Interior

U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 FAX: (602) 242-2513

In Reply Refer To:
AESO/SE
2-21-02-I-033

November 20, 2001

Mr. Paul Tober
Project Manager
Stantec Consulting Inc.
8211 South 48th Street
Phoenix, Arizona 85044

RE: Development of Nogales International Airport Master Plan

Dear Mr. Tober:

This letter responds to your November 2, 2001, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Santa Cruz County). The enclosed list may include candidate species as well. We hope the enclosed county list of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-02-I-033.

The enclosed list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the enclosed list is the Code of Federal Regulations (CFR) citation for each list and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate

species are those which are being considered for addition to the list of threatened or endangered species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways or excavation in waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Sherry Barrett at (520) 670-4617.

Sincerely,

Jacqueline Hanson

David L. Harlow
Field Supervisor

Enclosure

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

W:\Cathy Gordon\species list letters\phx stantec nogales airport.wpd:cgg

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **SANTA CRUZ**

10/11/2001

1)LISTED

TOTAL= 16

NAME: **CANELO HILLS LADIES' TRESSES** *SPIRANTHES DELITESCENS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE). FLOWER: STALK 50 CM TALL, MAY CONTAIN 40 WHITE FLOWERS SPIRALLY ARRANGED ON THE FLOWERING STALK.

ELEVATION RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: **HUACHUCA WATER UMBEL** *LILAEOPSIS SCHAFFNERIANA ssp RECURVA*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY (UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10 FLOWERED UMBELS ARISE FROM ROOT NODES.

ELEVATION RANGE: 3500-6500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO, WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 37441)

NAME: **PIMA PINEAPPLE CACTUS** *CORYPHANTHA SCHEERI ROBUSTISPINA*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 57 FR 14374, 04-20-1992

DESCRIPTION: HEMISHPERICAL STEMS 4-7 INCHES TALL 3-4 INCHES DIAMETER. CENTRAL SPINE 1 INCH LONG STRAW COLORED HOOKED SURROUNDED BY 6-15 RADIAL SPINES. FLOWER: YELLOW SALMON OR RARELY WHITE NARROW FLORAL TUBE.

ELEVATION RANGE: 2300-5000 FT.

COUNTIES: PIMA, SANTA CRUZ

HABITAT: SONORAN DESERTSCRUB OR SEMI-DESERT GRASSLAND COMMUNITIES

OCCURS IN ALLUVIAL VALLEYS OR ON HILLSIDES IN ROCKY TO SANDY OR SILTY SOILS. THIS SPECIE CAN BE CONFUSED WITH JUVENILLE BARREL CACTUS (FEROCACTUS). HOWEVER, THE SPINES OF THE LATER ARE FLATTENED, IN CONTRAST WITH THE ROUND CROSS-SECTION OF THE CORYPHANTHA SPINES. ALSO THE AREOLES (SPINE CLUSTERS) OF CORYPHANTHA ARE ON TUBERCULES (BUMPS), WHILE THE AREOLES OF FEROCACTUS ARE ON RIDGES (RIBS). 80-90% OF INDIVIDUALS ON STATE AND PRIVATE LAND.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: SANTA CRUZ

10/11/2001

NAME: **LESSER LONG-NOSED BAT** *LEPTONYCTERIS CURASOAE YERBABUENAE*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 53 FR 38456, 09-30-88

DESCRIPTION: ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE. YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW. TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

ELEVATION RANGE: <6000 FT.

COUNTIES: COCHISE, GILA, GRAHAM, GREENLEE, MARICOPA, PIMA, PINAL, SANTA CRUZ, YAVAPAI

HABITAT: DESERT SCRUB HABITAT WITH AGAVE AND COLUNMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA , USUALLY FROM APRIL TO SEPTMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

NAME: **MEXICAN GRAY WOLF** *CANIS LUPUS BAILEYI*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67; 43 FR 1912, 03-09-78

DESCRIPTION: LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR, BUT USUALLY A SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH 60-90 POUNDS.

ELEVATION RANGE: 4,000-12,00IFT.

COUNTIES: APACHE, COCHISE, GREENLEE, PIMA, SANTA CRUZ

HABITAT: CHAPPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS.

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE (COCHISE, PIMA, SANTA CRUZ) CONTINUE TO BE RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO. EXPERIMENTAL NONESSENTIAL POPULATION INTRODUCED IN THE BLUE PRIMITIVE AREA OF GREENLEE AND APACHE COUNTIES.

NAME: **OCELOT** *LEOPARDUS (=FELIS) PARDALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 47 FR 31670; 07-21-82

DESCRIPTION: MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS HEAVILY STREAKED THAN THE BACK AND SIDES.

ELEVATION RANGE: <8000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: HUMID TROPICAL & SUB-TROPICAL FORESTS, SAVANNAHS, AND SEMI-ARID THORNSCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS, SECOND-GROWTH WOODLAND, AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **SANTA CRUZ**

10/11/2001

NAME: **DESERT PUPFISH** *CYPRINODON MACULARIUS*

STATUS: ENDANGERED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 10842, 03-31-1986

DESCRIPTION: SMALL (2 INCHES) SMOOTHLY ROUNDED BODY SHAPE WITH NARROW VERTICAL BARS ON THE SIDES. BREEDING MALES BLUE ON HEAD AND SIDES WITH YELLOW ON TAIL. FEMALES & JUVENILES TAN TO OLIVE COLORED BACK AND SILVERY SIDES.

ELEVATION RANGE: <5000 FT.

COUNTIES: LA PAZ, PIMA, GRAHAM, MARICOPA, PINAL, YAVAPAI, SANTA CRUZ

HABITAT: SHALLOW SPRINGS, SMALL STREAMS, AND MARSHES. TOLERATES SALINE & WARM WATER

CRITICAL HABITAT INCLUDES QUITOBAQUITO SPRING, PIMA COUNTY, PORTIONS OF SAN FELIPE CREEK, CARRIZO WASH, AND FISH CREEK WASH, IMPERIAL COUNTY, CALIFORNIA. TWO SUBSPECIES ARE RECOGNIZED: DESERT PUPFISH (C. m. macularis) AND QUITOBAQUITO PUPFISH (C. m. eremus).

NAME: **GILA TOPMINNOW** *POECILIOPSIS OCCIDENTALIS OCCIDENTALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES), GUPPY-LIKE, LIVE BEARING, LACKS DARK SPOTS ON ITS FINS. BREEDING MALES ARE JET BLACK WITH YELLOW FINS.

ELEVATION RANGE: <4500 FT.

COUNTIES: GILA, PINAL, GRAHAM, YAVAPAI, SANTA CRUZ, PIMA, MARICOPA, LA PAZ

HABITAT: SMALL STREAMS, SPRINGS, AND CIENEGAS VEGETATED SHALLOWS

SPECIES HISTORICALLY OCCURRED IN BACKWATERS OF LARGE RIVERS BUT IS CURRENTLY ISOLATED TO SMALL STREAMS AND SPRINGS

NAME: **SONORA CHUB** *GILA DITAENIA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 16042, 04-30-1986

DESCRIPTION: MINNOW (<5 INCHES LONG) MODERATELY CHUBBY, DARK-COLORED FISH WITH TWO PROMINENT BLACK LATERAL BANDS ON THE SIDES AND A DARK OVAL SPOT AT THE BASE OF THE TAIL. BREEDING MALES HAVE RED LOWER FINS AND A ORANGE BELLY

ELEVATION RANGE: 3900 FT.

COUNTIES: SANTA CRUZ

HABITAT: PERENNIAL & INTERMITTENT SMALL TO MODERATE STREAMS WITH BOULDERS & CLIFFS

CRITICAL HABITAT IN SYCAMORE CREEK (SANTA CRUZ COUNTY). YANK SPRING TO INTERNATIONAL BORDER, 2.0 Km OF PENASCO CREEK, AND LOWER HALF OF UNNAMED STREAM ENTERING SYSCAMORE CREEK ABOUT 2.4 Km DOWNSTREAM FROM YANKS SPRING. SPECIES EXTENDS INTO MEXICO (ALTAR & MAGDELENA RIVERS).

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **SANTA CRUZ**

10/11/2001

NAME: **BALD EAGLE** *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38"; WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

NAME: **BROWN PELICAN** *PELECANUS OCCIDENTALIS CALIFORNICUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35 FR 18320, 12-02-70

DESCRIPTION: LARGE DARK GRAY-BROWN WATER BIRD WITH A POUCH UNDERNEATH LONG BILL AND WEBBED FEET. ADULTS HAVE A WHITE HEAD AND NECK, BROWNISH BLACK BREAST, AND SILVER GRAY UPPER PARTS.

ELEVATION RANGE: VARIES FT.

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: COASTAL LAND AND ISLANDS; ARIZONA LAKES AND RIVERS

SUBSPECIES IS FOUND ON PACIFIC COAST AND IS ENDANGERED DUE TO PESTICIDES. IT IS AN UNCOMMON TRANSIENT IN ARIZONA ON MANY ARIZONA LAKES AND RIVERS. INDIVIDUALS WANDER UP FROM MEXICO IN SUMMER AND FALL. NO BREEDING RECORDS IN ARIZONA.

NAME: **CACTUS FERRUGINOUS PYGMY-OWL** *GLAUCIDIUM BRASILIANUM CACTORUM*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 10730, 3-10-97

DESCRIPTION: SMALL (APPROX. 7"), DIURNAL OWL REDDISH BROWN OVERALL WITH CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME INDIVIDUALS ARE GRAYISH BROWN

ELEVATION RANGE: <4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, COCHISE

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND SONORAN DESERTSCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN, ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT WAS VACATED BY THE U.S. DISTRICT COURT FOR THE DISTRICT OF ARIZONA (9/19/01).

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **SANTA CRUZ**

10/11/2001

NAME: **MEXICAN SPOTTED OWL** *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91; 66 FR 8530, 2/1/01

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED. CRITICAL HABITAT WAS REMOVED IN 1998 BUT RE-PROPOSED IN JULY 2000 AND FINALIZED IN FEB 2001 FOR APACHE, COCHISE, COCONINO, GRAHAM, MOHAVE, PIMA COUNTIES; ALSO IN NEW MEXICO, UTAH, AND COLORADO.

NAME: **NORTHERN APLOMADO FALCON** *FALCO FEMORALIS SEPTENTRIONALIS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 6686, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS, GRAY BACK, LONG BANDED TAIL, AND A DISTINCT BLACK AND WHITE FACIAL PATTERN. SMALLER THAN PEREGRINE LARGER THAN KESTREL. BREEDS BETWEEN MARCH- JUNE

ELEVATION RANGE: 3500-9000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

NAME: **SOUTHWESTERN WILLOW FLYCATCHER** *EMPIDONAX TRAILLII EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.

ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT WAS SET ASIDE BY THE 10TH CIRCUIT COURT OF APPEALS (5/17/01).

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: **SANTA CRUZ**

10/11/2001

NAME: **SONORA TIGER SALAMANDER** *AMBYSTOMA TIGRINUM STEBBINSI*

STATUS: ENDANGERED CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 665, 01-06-97

DESCRIPTION: 2.6 TO 4.9" SNOUT-VENT LENGTH WITH LIGHT-COLORED BANDS ON A DARK BACKGROUND. AQUATIC LARVAE ARE UNIFORM DARK COLOR WITH PLUME-LIKE GILLS AND TAIN FINS.

ELEVATION RANGE: 4000-6300 FT.

COUNTIES: SANTA CRUZ, COCHISE

HABITAT: STOCK TANKS AND IMPOUNDED CIENEGAS IN SAN RAFAEL VALLEY, HUACHUCA MOUNTAINS

ALSO OCCURS IN THE FOOTHILLS OF THE EAST SLOPE OF THE PATAGONIA AND HUACHUCA MOUNTAINS. POPULATIONS ALSO ON FORT HUACHUCA.

2) PROPOSED TOTAL= 1

NAME: **CHIRICAHUA LEOPARD FROG** *RANA CHIRICAHUENSIS*

STATUS: PROPOSED CRITICAL HAB No RECOVERY PLAN: No CFR: 65 FR 37343, 6-14-2000

DESCRIPTION: CREAM COLORED TUBERCULES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIALLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRD

ELEVATION RANGE: 3300-8900 FT.

COUNTIES: SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO

HABITAT: STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE MOSTLY FREE FROM INTRODUCED FISH, CRAYFISH, AND BULLFROGS

REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER MAY BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: SANTA CRUZ

10/11/2001

3) CANDIDATE TOTAL= 3

NAME: **GILA CHUB** *GILA INTERMEDIA*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: DEEP COMPRESSED BODY, FLAT HEAD. DARK OLIVE-GRAY COLOR ABOVE, SILVER SIDES. ENDEMIC TO GILA RIVER BASIN.

ELEVATION RANGE: 2000 - 3500 FT.

COUNTIES: SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE, GRAHAM, YAVAPAI

HABITAT: POOLS, SPRINGS, CIENEGAS, AND STREAMS

MULTIPLE PRIVATE LANDOWERS, INCLUDING THE NATURE CONSERVANCY, THE AUDUBON SOCIETY, AND OTHERS. ALSO FT. HUACHUCA. SPECIES ALSO FOUND IN SONORA, MEXICO.

NAME: **YELLOW-BILLED CUCKOO** *COCCYZUS AMERICANUS*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR: 66 FR 38611; 07-25-01

DESCRIPTION: MEDIUM-SIZED BIRD WITH A SLENDER, LONG-TAILED PROFILE, SLIGHTLY DOWN-CURVED BILL, WHICH IS BLUE-BLACK WITH YELLOW ON THE LOWER HALF OF THE BILL. PLUMAGE IS GRAYISH-BROWN ABOVE AND WHITE BELOW, WITH RUFOUS PRIMARY FLIGHT FEATHERS.

ELEVATION RANGE: <6,500 FT.

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: LARGE BLOCKS OF RIPARIAN WOODLANDS (COTTONWOOD, WILLOW, OR TAMARISK GALLERIES)

SPECIES WAS FOUND WARRANTED, BUT PRECLUDED FOR LISTING AS A DISTINCT VERTEBRATE POPULATION SEGMENT IN THE WESTERN U.S. ON JULY 25, 2001. THIS FINDING INDICATES THAT THE SERVICE HAS SUFFICIENT INFORMATION TO LIST THE BIRD, BUT OTHER, HIGHER PRIORITY LISTING ACTIONS PREVENT THE SERVICE FROM ADDRESSING THE LISTING OF THE CUCKOO AT THIS TIME.

NAME: **HUACHUCA SPRINGSNAIL** *PYRGULOPSIS THOMPSONI*

STATUS: CANDIDATE CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: VERY SMALL (1.7-3.2mm) CONICAL SHELL. IDENTIFICATION MUST BE VERIFIED BY CHARARCTERISTICS OF REPRODUCTIVE ORGANS.

ELEVATION RANGE: 4500-6000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: AQUATIC AREAS, SMALL SPRINGS WITH VEGETATION SLOW TO MODERATE FLOW.

INDIVIDUALS FOUND ON FIRM SUBSTANCES (ROOTS, WOOD, AND ROCKS) OTHER POPULATIONS FOUND ON FORT HUACHUCA MILITARY PROPERTY

Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

Ms. Lisa Hanf (CMD-2)
U.S. EPA, Region IX
Chief Office of Federal Activities
75 Hawthorne St.
San Francisco, CA 94105

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport - Nogales, AZ

Dear Ms Hanf:

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings
Environment
Industrial
Transportation
Urban Land

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential environmental impacts associated with the proposed development.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport - Nogales, AZ

- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj

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Stantec Consulting Inc.
8211 South 48th Street
Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562

stantec.com

Stantec

2 November 2001
File: 81451310

USDA-NRCS

3003 N. Central Ave. Ste 800
Phoenix, AZ 85012-2945

Reference: Potential environmental Impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

Dear Sir or Madam::

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

Buildings

This letter serves to:

1) Notify your office of this planning effort.

Environment

2) Request any preliminary comments on the potential impacts to natural resources.

Industrial

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

Transportation

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).

Urban Land

- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.
- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Reference: Potential environmental Impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

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Phoenix AZ 85044
Tel: (602) 438-2200 Fax: (602) 431-9562
stantec.com

Stantec

2 November 2001
File: 81451310

Arizona Game and Fish
2221 W. Greenway Rd
PHX, AZ 85023-4399

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

Dear Sir or Madam:

Stantec Consulting Inc. is currently working with Santa Cruz County in the preparation of the Nogales International Airport Master Plan (Nogales, AZ). The Plan proposes development to meet the future aviation demand at the airport over an estimated 20-year planning window. In addition, the Plan reflects other possible development referred to as "contingency development" which may be needed as the community continues its ongoing economic development efforts.

State and FAA guidance coupled with our scope of services requires that we conduct a preliminary environmental review of the proposed development.

This letter serves to:

1) Notify your office of this planning effort.
2) Request any preliminary comments on the potential ecological impacts associated with the proposed development.

The attached drawing is provided to simplify your preliminary review. The drawing includes three (3) frames.

- The bottom frame depicts the long-term land use development proposed within the confines of the ultimate airport property boundary (see drawing Legend for land use designations).
- The top frame is an enlarged view of the west side of the airport to include some proposed facility layouts. Development on the west side is proposed in advance of all development on the east side to maximize use of existing infrastructure and centralize terminal area and support-related facilities.

Reference: Potential environmental impacts relative to proposed airport development - Nogales International Airport Master Plan - Nogales, Arizona

- The middle frame is an enlarged view of the east side of the airport, which conceptually proposes development for cargo and customs on an as-needed or contingency basis.

Please review the drawing and provide your comments and concerns regarding the proposed development no later than November 30, 2001.

You may mail, fax or e-mail comments. However, if you have any questions or need additional information in order to prepare a response, please feel free to contact me directly at 602-707-4647 or ptober@stantec.com.

Sincerely,

STANTEC CONSULTING INC.

Paul Tober
Project Manager
ptober@stantec.com

Copy: Ken Zehentner, Santa Cruz County
Wendy Renier, Airport Planning West

PT:jj
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Tober, Paul
From: clr101 [clr101@home.com]
Sent: Wednesday, December 19, 2001 2:33 PM
To: Tober, Paul
Subject: Nogales - Envir Corresp. - SHPO E-mail information

---------- Original Message ----------
From: David Jacobs <djacobs@pr.state.az.us>
Reply-To: David Jacobs <djacobs@pr.state.az.us>
Date: 07 Dec 2001 10:02:19 -0700

Wendy-
This is the follow up to our telephone conversation. The SHPO records show a negative survey (i.e., no historic properties identified) consisting of two parcels totalling 110 acres; the two parcels were located off the northern and southern ends of the runway, the northern extension being much longer than the southern. Our office signed off on the adequacy of the survey on June 17, 1992. The survey was done for the FAA, and the title of the survey was as follows: Nogales, Extension of Runway 3-21. David Jacobs, State Historic Preservation Office

Appendix C

Alternatives Matrix

LAND USE	ALTERNATIVES	Operational Feasibility	Environmental	Capital Investment/ Technical Feasibility	Socioeconomics	Evaluation Results
AOA	No Development (Alt 1)					
	C-II aircraft (Alts 2, 2A, 3, 3A)					
	C-III aircraft (Alts 2, 2A, 3, 3A)					
	Reloc. TVOR, TTF/Road Access (Alts 2, 2A, 3, 3A)					
	Parallel Runway (Alt 6)					

\+ Positive Impact

\- Negative Impact

0 Neutral

LAND USE	ALTERNATIVES	Operational Feasibility	Environmental	Capital Investment/ Technical Feasibility	Socioeconomics	Evaluation Results
Cargo	No Development (Alt 1)					
	North (Alts 2, 2A)					
	East (Alts 3, 3A)					
	West (Alt 4)					
	Contiguous East (Alt 5)					
	Limited West (Alt 6)					

+ Positive Impact
- Negative Impact
0 Neutral

LAND USE	ALTERNATIVES	Operational Feasibility	Environmental	Capital Investment/ Technical Feasibility	Socioeconomics	Evaluation Results
GA	No Development (Alt 1)					
	South (Alts 2, 2A)					
	West (Alts 3, 3A)					
	Northeast (Alt 4)					
	Southwest (Alt 5)					
	Limited West (Alt 6)					

\+ Positive Impact

\- Negative Impact

0 Neutral

LAND USE	ALTERNATIVES	Operational Feasibility	Environmental	Capital Investment/ Technical Feasibility	Socioeconomics	Evaluation Results
Terminal FBO Customs/ Border Patrol	No Development					
	Expand Existing Area					
	Southeast					
	Northwest					
	Terminal NW, Customs East					
	Limited Existing Area/West					

+ Positive Impact
- Negative Impact
0 Neutral

LAND USE	ALTERNATIVES	Operational Feasibility	Environmental	Capital Investment/ Technical Feasibility	Socioeconomics	Evaluation Results
	Develop Existing Airport					
	Relocate Airport					
	Displace Demand (close airport)					

\+ Positive Impact
\- Negative Impact
0 Neutral

Appendix D

FAA Form 7460-1

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

§77.13 Construction or alteration requiring notice.

(a) Except as provided in §77.15, each sponsor who proposes any of the following construction or alteration shall notify the Administrator in the form and manner prescribed in §77.17:

(1) Any construction or alteration of more than 200 feet in height above the ground level at its site.

(2) Any construction or alteration of greater height than an imaginary surface extending outward and upward at one of the following slopes:

(i) 100 to I for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a) (5) of this section with at least one runway more than 3,200 feet in actual length, excluding heliports.

(ii) 50 to 1 for a horizontal distance of I0,000 feet from the nearest point of the nearest runway of each airport specified in paragraph (a) (5) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.

(iii) 25 to I for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport specified in paragraph (a) (5) of this section.

(3) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) (1) or (2) of this section.

(4) When requested by the FAA, any construction or alteration that would be in an instrument approach area (defined in the FAA standards governing instrument approach procedures) and available information indicates it might exceed a standard of Subpart C of this part.

(5) Any construction or alteration on any of the following airports (including heliports):

(I) An airport that is available for public use and is listed in the Airport Directory of the current Airman's Information Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement.

(ii) An airport under construction, that is the subject of a notice or proposal on file with the Federal Aviation Administration, and except for military airports, it is clearly indicated that that airport will be available for public use.

(III) An airport that is operated by an armed force of the United States.

(b) Each sponsor who proposes construction or alteration that is the subject of a notice under paragraph (a) of this section and is advised by an FAA regional office that a supplemental notice is required shall submit that notice on a prescribed form to be received by the FAA regional office at least 48 hours before the start of construction or alteration.

(c) Each sponsor who undertakes construction or alteration that is the subject of a notice under paragraph (a) of this section shall, within 5 days after that construction or alteration reaches its greatest height, submit a supplemental notice on a prescribed form to the FAA regional office having jurisdiction over the region involved, if -

(1) The construction or alteration is more than 200 feet above the surface level of its site; or

(2) An FAA regional office advises him that submission of the form is required.

§77.15 Construction or alteration not requiring notice.

No person is required to notify the Administrator for any of the following construction or alteration:

(a) Any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

(b) Any antenna structure of 20 feet or less in height except one that would increase the height of another antenna structure.

(c) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device, of a type approved by the Administrator, or an appropriate military service on military airports, the location and height of which is fixed by Its functional purpose.

(d) Any construction or alteration for which notice is required by any other FAA regulation.

§77.17 Form and time of notice.

(a) Each person who is required to notify the Administrator under §77.13 (a) shall send one executed form set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area within which the construction or alteration will be located. Copies of FAA Form 7460-1 may be obtained from the headquarters of the Federal Aviation Administration and the regional offices.

(b) The notice required under §77.13 (a) (1) through (4) must be submitted at least 30 days before the earlier of the following dates -

(1) The date the proposed construction or alteration is to begin.

(2) The date an application for a construction permit is to be filed.

However, a notice relating to proposed construction or alteration that is subject to the licensing requirements of the Federal Communications Act may be sent to the FAA at the same time the application for construction is filed with the Federal Communications Commission, or at any time before that filing.

(e) A proposed structure or an alteration to an existing structure that exceeds 2,000 feet in height above the ground will be presumed to be a hazard to air navigation and to result in an inefficient utilization of airspace and the applicant has the burden of overcoming that presumption. Each notice submitted under the pertinent provisions of this part 77 proposing a structure in excess of 2,000 feet above ground, or an alteration that will make an existing structure exceed that height, must contain a detailed showing, directed to meeting this burden. Only in exceptional cases, where the FAA concludes that a clear and compelling showing has been made that it would not result in an inefficient utilization of the airspace and would not result in a hazard to air navigation, will a determination of no hazard be issued.

(d) In the case of an emergency involving essential public services, public health, or public safety that requires immediate construction or alteration, the 30 day requirement in paragraph (b) of this section does not apply and the notice may be sent by telephone, telegraph, or other expeditious means, with an executed FAA Form 7460-1 submitted within five (5) days thereafter. Outside normal business hours, emergency notices by telephone or telegraph may be submitted to the nearest FAA Flight Service Station.

(e) Each person who is required to notify the Administrator by paragraph (b) or (c) of §77.13, or both, shall send an executed copy of FAA Form 7460-2, Notice of Actual Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area involved.

ADDRESSES OF THE REGIONAL OFFICES

Alaska Region
AK
Alaskan Regional Office
Air Traffic Division, AAL-530
222 West 7th Avenue
Anchorage, AK 99513
Tel: 907-271-5893

Central Region
IA, KS, MO, NE
Central Regional Office
Air Traffic Division, ACE-520
601 East 12th Street
Kansas City, MO 64106
Tel: 816-426-3408 or 3409

Eastern Region
DC, DE, MD, NJ, NY, PA, VA, WV
Eastern Regional Office
Air Traffic Division, AEA-520
JFK International Airport
Fitzgerald Federal Building
Jamaica, NY 11430
Tel: 718-553-2616

Great Lakes Region
IL, IN, MI, MN, ND, OH, SD, WI
Great Lakes Regional Office
Air Traffic Division, AGL-520
2300 East Devon Avenue
Des Plaines, IL 60018
Tel: 847-294-7568

New England Region
CT, MA, ME, NH, RI, VT
New England Regional Office
Air Traffic Division, ANE-520
12 New England Executive Park
Burlington, MA 01803-5299
Tel: 781-238-7520

Northwest Mountain Region
CO, ID, MT, OR, UT, WA, WY
Northwest Mountain Regional Office
Air Traffic Division, ANM-520
1601 Lind Avenue, SW
Renton, WA 98055-4056
Tel: 425-227-2520

Southern Region
AL, FL, GA, KY, MS, NC, PR, SC, TN, VI
Southern Regional Office
Air Traffic Division, ASO-520
1701 Columbia Avenue
College Park, GA 30337
Tel: 404-305-5585

Southwest Region
AR, LA, NM, OK, TX
Southwest Regional Office
Air Traffic Division, ASW-520
2601 Meacham Boulevard
Fort Worth, TX 76137-0520

Western Pacific Region
HI, CA, NY, AZ, GU
Western-Pacific Regional Office
Air Traffic Division, AWP-520
15000 Aviation Boulevard
Hawthorne, CA 90260
Tel: 310-725-6557

Please Type or Print on This Form — Form Approved OMB No. 2120-0001

U.S. Department of Transportation
Federal Aviation Administration

Failure To Provide All Requested Information May Delay Processing of Your Notice

Notice of Proposed Construction or Alteration

FOR FAA USE ONLY
Aeronautical Study Number
- - -

1 Sponsor *(person, company, etc. proposing this action) :*
Attn. of: _____
Name: _____
Address: _____
_____
City: _____ State: _____ Zip: _____
Telephone: _____ Fax: _____

2. Sponsor's Representative *(if other than #1) :*
Attn. of: _____
Name: _____
Address: _____
_____
City: _____ State: _____ Zip: _____
Telephone: _____ Fax: _____

3. Notice of: ☐ New Construction ☐ Alteration ☐ Existing

4. Duration: ☐ Permanent ☐ Temporary (months, days)

5. Work Schedule: Beginning _____ End _____

6. Type: ☐ Antenna Tower ☐ Crane ☐ Building ☐ Power Line
☐ Landfill ☐ Water Tank ☐ Other _____

7. Marking/Painting and/or Lighting Preferred:
☐ Red Lights and Paint ☐ Dual - Red and Medium Intensity White
☐ White - Medium Intensity ☐ Dual - Red and High Intensity White
☐ White - High Intensity ☐ Other _____

8. FCC Antenna Structure Registration Number *(if applicable):*
_____

9. Latitude: ____° ____' ____. ____"

10. Longitude: ____° ____' ____. ____"

11. Datum: ☐ NAD 83 ☐ NAD 27 ☐ Other _____

12. Nearest: City: _____ State: _____

13. Nearest Public-use (not private-use) or Military Airport or Heliport:
_____

14. Distance from #13. to Structure: _____

15. Direction from #13. to Structure: _____

16. Site Elevation *(AMSL):* _____ ft.

17. Total Structure Height *(AGL):* _____ ft.

18. Overall height (#16. + #17.) *(AMSL):* _____ ft.

19. Previous FAA Aeronautical Study Number (if applicable):
_____ -

20. Description of Location: (Attach a USGS 7.5 minute Quadrangle Map with the precise site marked and any certified survey.)

21. Complete Description of Proposal:

Frequency/Power (kW)	

Notice is required by 14 Code of Federal Regulations, part 77 pursuant to 49 U.S.C., Section 44718. Persons who knowingly and willingly violate the notice requirements of part 77 are subject to a civil penalty of $1,000 per day until the notice is received, pursuant to 49 U.S.C., section 46301 (a).

I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to mark and/or light the structure in accordance with established marking and lighting standards as necessary.

Date	Typed or Printed name and Title of Person Filing Notice	Signature

INSTRUCTIONS FOR COMPLETING FAA FORM 7460-1

PLEASE TYPE or PRINT

ITEM #1. Please include the name, address, and phone number of a personal contact point as well as the company name.

ITEM #2. Please include the name, address, and phone number of a personal contact point as well as the company name.

ITEM #3. New Construction would be a structure that has not yet been built.

Alteration is a change to an existing structure such as the addition of a side mounted antenna, a change to the marking and lighting, a change to power and/or frequency, or a change to the height. The nature of the alternation shall be included in **ITEM #21** "Complete Description of Proposal".

Existing would be a correction to the latitude and/or longitude, a correction to the height, or if filing on an existing structure which has never been studied by the FAA. The reason for the notice shall be included in **ITEM #21** "Complete Description of Proposal".

ITEM #4. If Permanent, so indicate. If Temporary, such as a crane or drilling derrick, enter the estimated length of time the temporary structure will be up.

ITEM #5. Enter the date that construction is expected to start and the date that construction should be completed.

ITEM #6. Please indicate the type of structure. **DO NOT LEAVE BLANK.**

ITEM #7. In the event that obstruction marking and lighting is required, please indicate type desired. If no preference, check "other' and indicate "no preference'. **DO NOT LEAVE BLANK.** ***NOTE:*** *High intensity lighting shall be used only for structures over 500'AGL.* In the absence of high intensity lighting for structures over 500' AGL, marking is also required.

ITEM #8. If this is an existing tower that has been registered with the FCC, enter the FCC Antenna Structure Registration number here.

ITEM #9. and **#10.** Latitude and longitude must be geographic coordinates, accurate to within the nearest second or to the nearest hundredth of a second if known. Latitude and longitude derived solely from **a hand-held GPS instrument is NOT acceptable.** A hand-held GPS is only accurate to within 100 meters *(328 feet)* 95 per cent of the time. This data, when plotted, should match the site depiction submitted under **ITEM #20.**

ITEM #11. NAD 83 is preferred; however, latitude/longitude may be submitted in NAD 27. Also, in some geographic areas where NAD 27 and NAD 83 are not available other datums may be used. It is important to know which datum is used. **DO NOT LEAVE BLANK.**

ITEM #12. Enter the name of the nearest city/state to the site. If the structure is or will be in a city, enter the name of that city/state.

ITEM#13. Enter the full name of the nearest public-use (not private-use) airport (or heliport) or military airport (or heliport) to the site.

ITEM #14. Enter the distance **from** the airport or heliport listed in **#13 to the structure.**

ITEM #15. Enter the direction **from** the airport or heliport listed in **#13 to the structure.**

ITEM #16. Enter the site elevation above mean sea level and expressed in **whole feet** rounded to the nearest foot (e.g. 17' 3" rounds to 17', 17'6" rounds to 18'). This data should match the ground contour elevations for site depiction submitted under **ITEM #20.**

ITEM #17. Enter the total structure height **above ground level** in **whole feet** rounded to the **next highest foot** (e.g. 17'3" rounds to 18'). **The total structure height shall include anything mounted on top of the structure, such as antennas, obstruction lights, lightning rods, etc.**

ITEM #18. Enter the overall height above mean sea level and expressed in **whole feet.** This will be the total of **ITEM #16 + ITEM #17.**

ITEM #19. If an FAA aeronautical study was previously conducted, enter the previous study number.

ITEM #20. Enter the relationship of the structure to roads, airports, prominent terrain, existing structures, etc. Attach an 8-1/2" X 11" non-reduced copy of the appropriate 7.5 minute U.S. Geological Survey (USGS) Quadrangle Map MARKED WITH A PRECISE INDICATION OF THE SITE LOCATION. To obtain maps, Contact USGC at 1-800-435-7627 or via Internet at "http://mapping.usgs.gov". If available, attach a copy of a documented site survey with the surveyor's certification stating the amount of vertical and horizontal accuracy in feet.

ITEM #21.

- For transmitting stations, include maximum effective radiated power (ERP) and all frequencies.
- For antennas, include the type of antenna and center of radiation *(Attach the antenna pattern, if available).*
- For microwave, include azimuth relative to true north.
- For overhead wires or transmission lines, include size and configuration of wires and their supporting structures *(Attach depiction).*
- For **each** pole/support, include coordinates, site elevation, and structure height above ground level or water.
- For buildings, include site orientation, coordinates of **each** corner, dimensions, and construction materials,
- For alterations, explain the alteration thoroughly,
- For existing structures, thoroughly explain the reason for notifying the FAA *(e.g. corrections, no record of previous study, etc.).*

Filing this information with the FAA does not relieve the sponsor of this construction or alteration from complying with any other Federal, state, or local rules or regulations. If you are not sure what other rules or regulations apply to your proposal, contact local/state aviation and zoning authorities.

Paperwork Reduction Work Act Statement: This information is collected to evaluate the effect of proposed construction or alteration on air navigation and is not confidential. Providing this information is mandatory for anyone proposing construction or alteration that meets or exceeds the criteria contained in 14 CFR , part 77. We estimate that the burden of this collection is an average 19 minutes per response. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless R displays a currently valid OMB control number. The OMB control number for this collection is 2120-0001.

Appendix E

Based aircraft listing from airport manager 02-15-02

T-Hangers	Total of 12		
1	Pacific Brokerage	Be-A36	N621EA
2	Robert Radich	Ce-210	N6594Y
3	Graham Electric	Ce-182	N5822B
4	Rick Britton	Be-95	New
5	Gale Nellans	Pa-28-180	N8361W
6	Rio Vista Produce	Ce-172	New
7	Ed Graham	Ce-210	N8205M
8	Robert Truax	Pa-24-260	N8883P
9	Mike Vohland	Ce-337	N2575S
10	Harry Witman	Ce-172XP	N7319K
11	Joe Puchi	Mooney M20	N9585M
12	Droeger	Piper Clipper	N5219H

B-Units 1-5	Total of 5		
1	Williams	Ce-182	N2064G
2	Larry Harvey	Pa-32-300T	N82273
3	DeLaRosa	Ce-310	N8147M
4	Lydick	Piper Cub	N23165
5	Tiffin Aviation Serv.	Be-95-A55	N1509Z

Corp. Hgrs	Total of 6		
1	USBP	Cup & OH6	Various
2	Roy Anderson	Be-23	N1435L
	John Anderson	PT-26	N73520
	Wilie Greene	Experimental	N118DW
3	Robert Terpening	Be-60	N3344D

FBO Hgr	Total of 2		
1	Knotts Landing	Ce-172	N5408J
2	Knotts Landing	Ce-172	N5216J

Open Air	Total of 9		
=========	=========		
1	Ameriflight	Be-1900	Various
2	North/South Airways	Emb-120	Various
3	Jean Reynolds	Pa-24-260	N8559P
4	Donald Gabriel	Be-35	N9780R
5	Joe Machado	Ce-172	N222BV
6	Richard Ungerich	Ce-140	N89654
7	Billy Tatum	Pa-34-200T	N2958U
8	Bill Nickerson	Be-35	N3404B
9	Premium Leasing	PA-31T	N37RL

Grand total of 34 aircraft

Appendix F

Unit Cost Summary

UNIT COST SUMMARY

Phase I Development

2001 – Relocate Runway 21 Displaced Threshold		$ 25,000
1. 20 lights @ 600/unit	$ 12,000	
2. 6,500 sf marking @ 2/sf	$ 13,000	
2002 – Improve Runway 3 and 21 Safety Area to Meet FAA Design Standards		$ 550,000
1. Design @ ls	$ 50,000	
2. 100,000 cy grading @ 5/cy	$500,000	
2002 – Widen Remaining 6,000 feet of Runway 3-21 from 90 to 100 feet		$ 300,000
1. Design @ ls	$ 50,000	
2. 60 lights @ 600/unit	$ 36,000	
3. 18,000 sf marking @ 2/sf	$ 36,000	
4. 6,660 cy grading @ 5/cy	$ 33,300	
5. SEC @ ls	$ 3,000	
6. 6,670 sy paving @ 10/sy	$ 66,700	
7. 5,000 cy ag base @ 15/cy	$ 75,000	
2002 – Runway Pavement Preservation and Relocation of Holdlines		$1,000,000
1. Design @ ls	$100,000	
2. 50,000 sf marking @ 2/sf	$100,000	
3. 80,000 sy paving @ 10/sf	$800,000	
2002 – Install PAPI to replace SAVASI & Upgrade Signage		$ 200,000
1. Design @ ls	$ 40,000	
2. PAPI unit @ ls	$100,000	
3. 20 signs @ 3,000/unit	$ 60,000	
2002 – Environmental Assessment		$ 100,000
1. For roadway & land @ ls	$100,000	
2002 – Land Acquisition		$ 200,000
1. 35 ac @ ls	$200,000	
2002 –Acquire Sweeper		$ 150,000
1. Sweeper unit @ ls	$150,000	
2002 –Upgrade MIRL and Electrical Vault		$ 350,000
1. Design @ ls	$ 50,000	
2. Vault unit @ ls	$300,000	
2003 –Install Terminal/Apron Area Security Fencing & Upgrade Perimeter Fencing		$ 500,000
1. Design @ ls	$ 50,000	
2. 3 Gates @ 10,000/unit	$ 30,000	
3. 21,000lf fencing @ 20/lf	$420,000	
2003 – Install MITL to replace Taxiway Reflectors		$ 410,000
1. Design @ ls	$ 56,000	
2. 90 lights @ 600/unit	$ 54,000	
3. 30,000 elec. Line @ 10/lf	$300,000	

2003 – Bury west-side electrical lines and expand telephone service airport-wide		$ 80,000
1. 4000 lf utilities @ 20/lf	$ 80,000	
2004 –Widen two (2) Taxiways to 75 feet		$ 200,000
1. Design @ ls	$ 45,000	
2. 10 lights @ 600/unit	$ 6,000	
3. 5,000 cy grading @ 5/cy	$ 25,000	
4. 6,000 sy paving @ 10/sy	$ 60,000	
5. 4,000 cy ag base @ 15/cy	$ 60,000	
6. 2,000 sf marking @2/sf	$ 4,000	
2004 –Install Emergency Generator		$ 165,000
1. Generator unit @ ls	$165,000	
2005 – Construct 11 additional hangars for aircraft storage		$ 330,000
1. 11 hangar units @ 30,000/unit	$330,000	
2005 – Construct airport perimeter road		$ 350,000
1. Design @ ls	$ 50,000	

Phase II Development

Install Additional Security Lighting		$ 25,000
1. 6 lights @ 4,100/unit		
Install Automated Sliding Gates with Card Readers		$ 50,000
1. 2 gates @ 25,000/unit		
Taxiway/Taxilane Pavement Preservation		$ 100,000
1. Design @ ls	$ 20,000	
2. 40,000 sy pavepres @ 2/sy	$ 80,000	
Apron Area Pavement Preservation		$ 45,000
1. Design @ ls	$ 5,000	
2. 2,000 sy pavepres @ 2/sy	$ 40,000	
Purchase additional ARFF Equipment		$ 400,000
1. ARFF unit @ ls	$400,000	
Airport Master Plan Update 2007		$ 120,000
1. Master Plan @ ls	$120,000	
Runway Pavement Preservation		$ 150,000
1. Design @ ls	$ 20,000	
2. 65,000 sy pavepres @ 2/sy	$130,000	

Construct additional 20,000 square feet of Cargo Apron		$ 160,000
1. Design @ ls	$ 32,000	
2. 3,000 sf marking @ 2/sf	$ 6,000	
3. 2,000cy grading @5/cy	$ 10,000	
4. SEC @ ls	$ 7,000	
5. 2,000 cy ag base @ 15/cy	$ 30,000	
6. 2,500 sy paving @ 10/sy	$ 25,000	
7. 10 lights w/util @ 5,000/unit	$ 50,000	
Expand Terminal by 1,514 square feet		$ 150,000
1. 1,500 sf building @ 100/sf	$150,000	
Construct five (5) additional hangars for aircraft storage		$ 150,000
1. 5 hangar units @ 30,000/unit	$150,000	

Phase III Development

Taxiway/Taxilane Pavement Preservation		$ 100,000
1. Design @ ls	$ 20,000	
2. 40,000 sy pavepres @ 2/sy	$ 80,000	
Apron Area Pavement Preservation		$ 45,000
1. Design @ ls	$ 5,000	
2. 20,000 pavepres @ 2/sy	$ 40,000	
Airport Master Plan Update 2012		$ 120,000
1. Master Plan @ ls	$120,000	
Runway Pavement Preservation		$ 150,000
1. Design @ ls	$ 20,000	
2. 65,000 sy pavepres @ 2/sy	$130,000	
Taxiway/Taxilane Pavement Preservation		$ 100,000
1. Design @ ls	$ 20,000	
2. 40,000 sy pavepres @ 2/sy	$ 80,000	
Apron Area Pavement Preservation		$ 45,000
1. Design @ ls	$ 5,000	
2. 20,000 pavepres @ 2/sy	$ 40,000	
Airport Master Plan Update 2017		$ 120,000
1. Master Plan @ ls	$100,000	
Construct 14 additional hangars for aircraft storage		$ 420,000
1. 14 hangar units @ 30,000/unit	$420,000	

Appendix G

ALP Checklist

U.S. Department of Transportation
Federal Aviation Administration
Western-Pacific Region – Airports Division

AIRPORT LAYOUT PLAN DRAWING CHECKLIST

Name of Airport: Nogales International Airport
Location of Airport: Nogales, Arizona
Date of Review: February 15, 2002 Reviewed by: Stantec Consulting Inc. (Paul Tober) in association with Airport Planning West (Wendy Renier)

Item	Included Yes	Included No	Remarks
SHEET SIZE:			
24" X 36"	(X)	( )	
BAR SCALE:			
1"=200' to 1"=600'	(X)	( )	1"=400'
NORTH ARROW:			
True & Current Magnetic Declination w/Annual Rate of Change	(X)	( )	
WIND ROSE:			
Source & Time Period	(X)	( )	
Shown in MPH & Knots	(X)	( )	
12 MPH Individual & Combined Coverage	(X)	( )	
15 MPH Individual & Combined Coverage	(X)	( )	
AIRPORT REFERENCE POINT			
Existing	(X)	( )	
Ultimate Development	(X)	( )	
Labeled Lat/Long at point on drawing	(X)	( )	
TOPOGRAPHIC INFO:			
2' to 10' Contours	(X)	( )	10'
Contours are Labeled	(X)	( )	
NAD 83: (Mandatory)			
North American Datum Used for ALL Lat/Long identifications	(X)	( )	

ELEVATIONS:			
Existing Runway Ends including Displaced Threshold	(X)	( )	(E) and (F)
Ultimate Runway Ends	(X)	( )	
Runway Intersections	(X)	( )	
Runway High & Low Points	(X)	( )	
Touchdown Zone Elevation (TDZE) Highest RWY Elevation in first 3000' of any RWY which will have published straight-in minimums	(X)	( )	
LINES:			
Existing Property Boundary	(X)	( )	
Ultimate Property Boundary	(X)	( )	
Building Restriction Line (BRL)- on both sides of the Runway	(X)	( )	
Section Corners (minimum of 2)	(X)	( )	
Existing Development shown with Solid or Bold Lines	(X)	( )	
Future Development shown w/Dashed or Screened Lines	(X)	( )	Future buildings hatched
RUNWAY DRAWING DETAILS:			
Length & Width of Existing R/W	(X)	( )	
Length & Width of Ultimate R/W	(X)	( )	
End Numbers – for each end	(X)	( )	
True Bearings to nearest sec.	(X)	( )	
Runway Markings – (Basic, Non-Prec., Precision)	(X)	( )	
Existing Lighting shown	(X)	( )	
Ultimate Lighting indicated	(X)	( )	
Lat./Long. & Elevations for Runway Thresholds and Displaced Thresholds	(X)	( )	
Runway Safety Areas (RSA) w/dimensions	(X)	( )	
Centerline shown w/ true bearings	(X)	( )	
Existing Runway should be lightly shaded	(X)	( )	
Approach aides indicated (ILS, REILS)	(X)	( )	
Obstacle Free Zone (OFZ) -Based on usage by only small Airplanes or to include Large Aircraft	(X)	( )	
Latitude, Longitude & Elevation -For any non-federal on-airport NAVAID to be used in the Instrument Approach Procedure	( )	(n/a)	N/A – Future GPS TBD

TAXIWAY DETAILS:			
Width of Existing	(X)	( )	
Width of Ultimate	(X)	( )	
Labeled by Name (i.e. T/W A, T/W B, T/W D)	(X)	( )	
Dimensional Clearance Widths And Separations from:			
a) Runway Centerline(s)	(X)	( )	
b) Parallel Taxiway	(X)	( )	
c) Aircraft Parking Area(s)	(X)	( )	
AIRCRAFT PARKING APRON:			
Existing location depicted	(X)	( )	
Ultimate location depicted	(X)	( )	
If scale permits:			
Aircraft Tie-down locations	(X)	( )	
Aircraft Tie-down layout	(X)	( )	
RUNWAY PROTECTION ZONES:			
Dimensions Indicated	(X)	( )	
Approach Slope Labeled ex: 20:1	(X)	( )	
Existing RPZ shown	(X)	( )	
Ultimate RPZ shown	(X)	( )	
Type of Ownership: (Labeled)			
a) Currently Own in Fee	(X)	( )	
b) Avigation Easement	(X)	( )	
c) Future Fee Acquisition	(X)	( )	
d) Unregulated	( )	(n/a)	
Hatching/Shading not used	(X)	( )	Limited use on RPZ
TITLE & REVISION BLOCKS:			
Name & Location of Airport	(X)	( )	
Name of Preparer (Sponsor or Consultant)	(X)	( )	
Date of Drawing	(X)	( )	
Drawing Title (ALP, Terminal)	(X)	( )	
Revision Area Block provided w/FAA Disclaimer information	(X)	( )	
Approval Block (Sponsor only)	(X)	( )	
Standardized Area for FAA Approval Stamp	(X)	( )	
AIRPORT DATA BLOCK:			
Airport Elevation in Feet above Mean Sea Level (MSL)			
a) Existing	(X)	( )	
b) Ultimate	(X)	( )	
Airport Reference Point (ARP) Coordinates (Lat/Long to nearest second)			
a) Existing	(X)	( )	
b) Ultimate	(X)	( )	

Airport & Terminal NAVAIDS indicated (Beacon, ILS, etc.)	(X)	( )	
Mean Max. Temp. –Indicate hottest month in degrees Fahrenheit	(X)	( )	
Airport Reference Code:			
- Runway Category (A-D)	(X)	( )	
- Airplane Design Group (I-VI) Example: (A-I, B-II, D-VI)	(X)	( )	
Design Aircraft (B-727, Cessna 172, B-747) Desired airport usage	(X)	( )	
GPS at Airport	(X)	( )	Future

RUNWAY DATA BLOCK:	(Indicate for each Runway)		
% Effective Gradient	(X)	( )	
% Wind Coverage (show MPH)	(X)	( )	
Max Elevation Above MSL	(X)	( )	
Runway Length – Existing	(X)	( )	
Runway Length – Ultimate	(X)	( )	
Runway Width – Existing	(X)	( )	
Runway Width – Ultimate	(X)	( )	
Runway Surface Type (turf, dirt, asphalt)	(X)	( )	
Taxiway Surface Type (turf, dirt, asphalt)	(X)	( )	
Instrument Runway (type)	(X)	( )	
Approach Slope (20:1, 50:1, 34:1)	(X)	( )	
Pavement Strength in lbs. and type (single wheel, dual, dual tandum)	(X)	( )	
Runway Lighting (low, medium, high – LIRL, MIRL, HIRL)	(X)	( )	
Runway Marking (Basic, Non-prec)	(X)	( )	
Navigational Aids (ILS, NDB, GPS)	(X)	( )	
Visual Aids (GVGI, REIL, etc.)	(X)	( )	
Runway Safety Area (RSA) Dimensions:			
a) Length beyond runway end	(X)	( )	
b) Width	(X)	( )	
FAR Part 77 Category by Rwy End:			
a) visual/visual	( )	(n/a)	
b) precision/non-precision	(X)	( )	NPI – both runway ends
c) visual/utility	( )	(n/a)	
d) non-precision/utility	( )	(n/a)	

MISCELLANEOUS:			
Adjacent land uses to airport identified/labeled?	(X)	( )	In progress
Airport Facilities List (Existing and Ultimate)	(X)	( )	
Symbolic Legend – all symbols identified?	(X)	( )	

Location Map	(X)	( )	_____
Vicinity Map	(X)	( )	_____
Roadways Identified?	(X)	( )	_____

RWY END COORDINATE BOX:
Give Lat. & Long. For each End

- Existing	(X)	( )	_____
- Ultimate	(X)	( )	_____

ADDITIONAL COMMENTS:
Airport Layout Plan is in preliminary draft form and will be revised/refined as draft master plan update report is revised.

Appendix H

Airport Influence Area

28-8485. Airport influence areas; notice

A. After notice and hearing, this state or the governing body of a political subdivision that has established or operates an airport may designate as an airport influence area all property that is in the vicinity of the airport, that is currently exposed to aircraft noise and overflight and that either has a day-night average sound level of sixty-five decibels or higher or is within such geographical distance from an existing runway that exposes the area to aircraft noise and overflights as determined by the airport owner or operator.

B. If this state or the governing body of a political subdivision establishes an airport influence area, this state or the governing body shall prepare and file a record of the airport influence area in the office of the county recorder in each county that contains property in the airport influence area. The record shall be sufficient to notify owners or potential purchasers of property in the airport influence area that property in the area is currently subject to aircraft noise and aircraft overflights.

28-8486. Public airport disclosure; definitions

A. The state real estate department shall have and make available to the public on request a map showing the exterior boundaries of each territory in the vicinity of a public airport. The map shall clearly set forth the boundaries on a street map. The state real estate department shall work closely with each public airport and affected local government as necessary to create a map that is visually useful in determining whether property is located in or outside of a territory in the vicinity of a public airport.

B. Each public airport shall record the map prepared pursuant to subsection A in the office of the county recorder in each county that contains property in a territory in the vicinity of the public airport. The recorded map shall be sufficient to notify owners and potential purchasers of property that the property is located in or outside of a territory in the vicinity of a public airport.

C. For the purposes of this section:

1. "Public airport" means an airport that is owned by a political subdivision of this state or that is otherwise open to the public.

2. "Territory in the vicinity of a public airport" means property that is within the traffic pattern airspace as defined by the federal aviation administration and includes property that experiences a day-night average sound level as follows:

(a) In counties with a population of more than five hundred thousand persons, sixty decibels or higher at airports where such an average sound level has been identified in either the airport master plan for the twenty year planning period or in a noise study prepared in accordance with airport noise compatibility planning, 14 Code of Federal Regulations part 150.

(b) In counties with a population of five hundred thousand persons or less, sixty-five decibels or higher at airports where such an average sound level has been identified in the airport master plan for the twenty year planning period.

32-2113. Recorded disclosure for territory in the vicinity of a military airport

A. The commissioner shall execute and record in the office of the county recorder in each county in this state that includes territory in the vicinity of a military airport as defined in section 28-8461 a document, applicable to property located within territory in the vicinity of a military airport, with the following disclosure: "this property is located within territory in the vicinity of a military airport and may be subject to increased noise and accident potential."

B. The attorney general shall prepare in recordable form the document that is executed and recorded by the commissioner pursuant to this section.

C. The document that is executed and recorded by the commissioner shall include a legal description of the territory in the vicinity of a military airport as defined in section 28-8461. The military airport shall cause the legal description to be prepared and shall provide the legal description to the commissioner in recordable form in twelve point font on eight and one-half inch by eleven inch paper.

Appendix I

Airport District Overlay Zone Ordinance

AMENDMENT 1998 - 09
TO ORDINANCE #3A OF 1973
ESTABLISHING AMENDMENTS TO THE
SANTA CRUZ COUNTY ZONING AND DEVELOPMENT CODE

WHEREAS, on May 21, 1973, the Board of Supervisors adopted the Santa Cruz County Zoning Ordinance of 1973 which became effective on October 5, 1973;

Whereas, the Board has considered additional amendments to the adopted regulations, pursuant to public hearings held before the Planning and Zoning Commission and the Board of Supervisors;

NOW, THEREFORE, BE IT ORDAINED:

Effective on the 7 day of August, 1998,

Article 24 (Airport District Overlay Zone) is hereby established to read as follows:

ARTICLE 24

AIRPORT DISTRICT OVERLAY ZONE (ADOZ)

SEC. 2401 PURPOSE

The purpose of the establishment of the Airport District Overlay Zone (ADOZ) is the encouragement of compatible land uses in the vicinity of airports and the promotion of public health and safety of the general public and the welfare and safety of airport users as provided in A.R.S. 28-8462.

SEC. 2402 GENERAL

A) The provisions and regulations of the Airport District Overlay Zone (ADOZ) if more restrictive shall prevail over existing zoning districts or rezoned district over which the Airport District is superimposed.

B) Procedures and requirements of other Articles within these regulations shall apply to the establishment of authorized land uses within the Airport District.

C) Refer to the specific Airport Environs Plan Area Map.

SEC. 2403 APPLICABILITY

Nothing contained herein shall require any change or alteration in a lawfully established, erected or relocated building or land in existence at the time of adoption or amendment of these regulations.

SEC. 2404 SURFACES AND ZONES, ESTABLISHMENT AND DEFINITIONS

A) AIRPORT DISTRICT OVERLAY ZONE

An overlay extending 5,280 feet by 5,280 feet from the centerline of the primary surface as measured from the respective side and ends of the primary surface. See Attachment A (Airport Environs Plan Area Map).

B) PRIMARY SURFACE

The Primary Surface is the Airport runway length plus a two hundred foot (200') runway overrun beyond each end of surfaced runways. The width of the Primary Surface is the width of the approach surface at the end of the Primary Surface. See Attachment A (Airport Environs Plan Area Map).

C) APPROACH SURFACE

Approach Surfaces are established longitudinally beyond the end of each runway, centered on an extension of the runway centerline extending uniformly upward and outward from a specified width at the end of the primary surface. Approach surface criteria for specific runway categories and uses are established as shown in Table 24-I.

D) TRANSITIONAL SURFACES

Transitional Surfaces extend upward and outward perpendicular to the runway centerline at a slope of one foot (1') in seven feet (7') from the sides of the Primary Surface and the sides of the Approach Surfaces.

E) INNER HORIZONTAL SURFACE

The Inner Horizontal Surface is an oval shaped plane one hundred fifty feet (150') above the established airfield elevation consisting of arcs of seventy five thousand (75,000) foot radius centered on the end of each runway with tangential interconnections.

F) CONICAL SURFACE

The Conical Surface extends from the periphery of the Inner Horizontal Surface upward and outward at a slope of one foot (1') in twenty (20') to a height of five hundred feet (500') above the established airfield elevation.

G) OUTER HORIZONTAL SURFACE

The Outer Horizontal Surface is a plane five hundred feet (500') above the established airfield elevation extending outward from the periphery of the Conical Surface for a horizontal distance of thirty thousand (30,000) feet.

H) CLEAR ZONES

Clear Zones, having the greatest aircraft accident and crash potential are established off the end of each primary surface centered on the extension of the runway centerline and having the same surface dimensions as the Approach Surface, extending for a distance of one thousand (1,000) feet for visual and non-precision approach instrument runways and a distance of three thousand (3,000) feet for military and precision approach instrument runways. See Attachment A (Airport Environs Plan Area Map).

I) ACCIDENT POTENTIAL ZONE (APZ)

Accident Potential Zone (APZ) means the area within the Airport District Overlay Zone (ADOZ). See Attachment A (Airport Environs Plan Area Map).

J) GREATER THAN 75 Db NOISE ZONE

The Greater Than 75 dB Noise Zone is the area between the area inside the seventy-five (75) Ldn contour line as developed and delineated on the Santa Cruz County Airport District Noise Overlay Map by the application of the day-night average sound level methodology of sound measurements. See Attachment B (Airport Environs Plan Area Map with Noise Zone Illustrations).

K) 70 TO 75 Db NOISE ZONE

The 70 to 75 dB Noise Zone is the area between the Ldn 70 contour line and the Ldn 75 contour line delineated on the Santa Cruz County Airport District Noise Overlay Map as developed by the Ldn Methodology. See Attachment B (Airport Environs Plan Area Map with Noise Zone Illustrations).

L) 65 TO 70 Db NOISE ZONE

The 65 to 70 dB Noise Zone is the area between the Ldn 65 contour line and Ldn 70 contour line delineated on the Santa Cruz County Airport District Noise Overlay Ma as developed by the Ldn Methodology. See Attachment B (Airport Environs Plan Area Map with Noise Zone Illustrations).

M) Where the Accident Potential Zone and Ldn area co-exist on the same ground area, the most restrictive limitation shall apply.

N) When, at the time of the adoption of this regulation a noise contour line divides or traverses an individually designated or identified parcel or lot consisting of forty (40) acres or less, the parcel or lot, at the election of the owner, shall be treated as lying within the noise zone in which fifty one percent (51%) of the property is situated. The burden of proof of the acreage percentage shall be upon the property owner/applicant.

O) Whenever the Airport Layout Plan is amended, the Airport Environs Plan Area Map which illustrated the physical boundaries of the airport shall also be deemed amended to conform to the amended Airport Layout Plan.

SEC. 2405 SURFACES AND ZONES - HEIGHT AND USE REGULATIONS

A) No use shall be made of land underlying any surface boundaries created by the Article in such a manner as to create electrical interference with radio communications between the airport tower and aircraft, or make it difficult for airport users to distinguish between airport light and vicinity light, result in a glare or impair visibility in the vicinity of the airport, cause the gathering of large quantities of birds or otherwise endanger the landing, take off or maneuvering of the aircraft.

B) No structure, building or trees shall be erected, altered, monitored or allowed to grow in any primary approach, transitional, horizontal or conical surface established by this article to a height in excess of the applicable height limit herein established as surface boundaries.

C) The following land uses are prohibited within the Airport District Overlay Zone.

1) High Hazard Occupancies

2) Institutional and Educational Occupancies

a) Exception; aviation schools.

3) Medium and High Density Residential Development

D) High Hazard Occupancies, Institutional Occupancies and Medium and High Density Residential Developments are identified in Table 24-2.

E) HAZARD MARKING AND LIGHTING

When in the opinion of the Airport Technical Advisor the erection or existence of any pole, tower, tank or other structure shall constitute a hazard to operation of aircraft in the vicinity of the airport, the owner of the structure or plant material shall at his own expense, install, operate and maintain such markers and lights as may be necessary to indicate to aircraft operators the presence of an airport hazard, as provided in FAA Advisory Circular 70/7460-ID.

SEC. 2406 CLEAR ZONES, APZ AND NOISE ZONE USE REGULATIONS

A) The provisions, regulations and building codes of the Airport District Overlay Zone, if more restrictive, shall prevail over those of the zoning districts upon which Clear Zones, Accident Potential Zones and Noise Zone Use Regulations are superimposed.

B) CLEAR ZONE

No new construction or parking is allowed in the Clear Zone as identified in the Airport Environs Plan Area Map.

C) ACCIDENT POTENTIAL ZONE

The Accident Potential Zone is the zone which, based on national averages have significant aircraft crash and accident potentials. Permitted land uses and population densities within the APZ are shown in Table 24-3 (2).

D) NOISE ZONES

Noise Zones are delineated on the Airport Environs Plan Area Map as the areas bounded by the noise contours. Noise contours are delineated in terms of Ldn values established through the analysis of sound measurements of composite

aircraft operations on and in the vicinity of the airport. The construction of habitable structures shall be regulated to assure suitable noise attenuation characteristics based on location within a particular noise zone. Regulation of sound attenuation or Noise Level Reductions (NLR) characteristics will be accomplished through the application of appropriate zoning regulations and the enforcement of building codes acceptable to the Building Department in the addition to existing structures. Permitted land uses including the construction of habitable structures are regulated as shown in Table 24-3(1) and 24-3(2).

SEC. 2407 ADMINISTRATION AND ENFORCEMENT

A) The Planning and Zoning Department, of Santa Cruz County is hereby designated the administrative agency charged with the duty of administering the regulations herein prescribed according to the provisions of A.R.S. Section 28-8469.

B) The Board of Supervisors shall appoint a person qualified by training or experience in planning, zoning or code enforcement as Airport Zoning Inspector, who shall have all authority conferred by state law necessary to enforce the Airport district regulations. Until such appointment is made, or in the event of vacancy or disability therein, the duties of the Airport Zoning Inspector shall be vested in the Planning and Zoning Director.

C) The Board of Supervisors shall appoint a person qualified by training or experience in land use, transportation engineering and the management of public rights of way as Airport Facilities and Operations Advisor. Until such appointment is made or in the event of vacancy or disability therein the duties of the Airport Facilities and Operations Advisor shall be vested in the Public Works Director.

D) The Board of Supervisors shall appoint a person qualified by training or experience in the management and administration of an International Airport as Airport Technical Advisor. The qualified person should be an experienced pilot familiar with aviation equipment and airport operations until such appointment is made or in the event of vacancy or disability therein the duties of the Airport Technical Advisor shall be vested in the Administrator/Manager of the Nogales International Airport.

E) APPLICATION PROCESS

Prior to proceeding with a request before the appropriate public body a a completed application must be submitted to the Planning and Zoning Department. The completed application shall include.

1. A written report form the Airport Facilities and Operations Advisor and a written report from the Airport Technical Advisor describing the effects the requested development would have on the airport and surrounding property owners.

2. The Airport Technical Advisor and Airport Facilities and Operations Advisor shall have twenty (20) days within which to complete the written report requested by an applicant. An applicants requests for the report must be made in writing.

F) PERMIT

1. A permit shall be obtained from the Planning and Zoning Department before a new structure or use may be constructed, established, substantially changed, altered or repaired in the Airport District Overlay Zone.

2. Before a nonconforming structure or tree may be replaced, substantially altered, repaired, rebuilt, allowed to grow higher or replanted, a permit shall be obtained form the Planning and Zoning Department.

3. A permit shall not be granted that will allow the establishment or creation of an airport hazard or permit a nonconforming structure or tree or nonconforming use to be made or become higher or a greater hazard to air navigation than it was when the Airport District Overlay Zone regulation was adopted or than it is when an application for a permit is made.

4. Except as provided in this section, all applications for permits shall be granted.

G. VARIANCE

1. A person who wants to erect or increase the height of a structure, permit the growth of a tree or otherwise use the person's property in violation of an airport zoning regulation adopted under this article may apply to the Board of Adjustment for a variance from the airport zoning regulation in question.

2. A variance shall be allowed if a literal application or enforcement of the regulations would result in practical difficulty or unnecessary hardship and the relief granted would not be contrary to the public interest, would do substantial justice and would be in accordance with the spirit of the regulation and this article.

3. A variance may be allowed subject to any reasonable conditions the Board of Adjustment deems necessary to fulfill the purpose of this article.

H. PERMIT, VARIANCE; CONDITIONS HAZARD INDICATORS

In granting a permit or variance under Section 707(F) or 707 (G), the Planning and Zoning Department or Board of Adjustment, if it deems the action advisable to fulfill the purposes of this article and reasonable in the circumstances, may place a condition on the permit or variance that requires the owner of the structure or tree in question to permit the political subdivision, at its own expense, to install, operate and maintain markers and lights on the structure or tree as necessary to indicate the presence of an airport hazard.

I. AIRPORT ZONING REGULATIONS; BOARD OF ADJUSTMENT; POWERS; COMPOSITION; PROCEEDINGS.

1. The Board of Adjustment shall exercise the following powers:

   a. Hear and decide appeals from an order, requirement, decision or determination made by the Planning and Zoning Department in the enforcement of the airport zoning regulations as provided.

   b. Hear and decide special exceptions to the terms of the airport zoning regulations on which the Board may be required to pass under the regulations.

   c. Hear and decide specific variances under Section 707(F).

2. The Board of Adjustment for each supervisoral district which contains a portion of the ADOZ shall serve as the Board of Adjustment for Airport Zoning regulation issues arising in that supervisoral district.

3. The concurring vote of a majority of the members of the Board of Adjustment is sufficient to:

   a. Reverse an order, requirement, decision or determination of the Planning and Zoning Department.

   b. Decide in favor of the applicant on any matter on which it is required to act under the airport zoning regulations.

   c. Make variations in the regulations.

4. The Board shall:

   a. Adopt regulations in accordance with provisions of the ordinance or resolution by which it is establish.

   b. Hold meetings at the call of the chairman and at other times as the Board determines.

   c. Have the chairman, or in the chairman's absence, the acting chairman, administer oaths and compel the attendance of witnesses.

   d. Hold only public hearings.

   e. Keep minutes of its proceedings showing the vote of each member on each question, or if a member is absent or fails to vote, indicating that fact.

   f. Keep records of its examinations an other official actions as public records and file them in the office of the Board.

J. BOARD OF ADJUSTMENT;

1. A person who is aggrieved or a taxpayer who is affected by a decision of the Planning and Zoning Department made in the administration of airport zoning regulations adopted under this article, or a governing body of a political subdivision or a joint airport zoning board that is of the opinion that a decision of the Planning and Zoning Department is an improper application of airport zoning regulations, may appeal to the Board of Adjustment authorized to hear and decide appeals from the decisions of the Planning and Zoning Director.

2. An appeal taken under this section shall be taken within a reasonable time as provided by the rules of the Board and by filing a notice of appeal specifying the grounds of the appeal with the Planning and Zoning Department and with the Board. The Planning and Zoning Director shall immediately transmit to the Board all papers constituting the record on which the action appealed from was taken.

3. An appeal stays all proceedings unless the Planning and Zoning Director certifies to the Board, after the notice of appeal has been filled with it, that by reason of the facts stated in the certificate a stay would cause imminent peril to life or property. Proceedings shall not be stayed except by order of the Board on notice to the Planning and Zoning Director and for cause shown.

4. The Board shall:

   a. Fix a reasonable time for hearing appeals.

   b. Give public notice and notice to the parties in interest.

   c. Render a decision within a reasonable time.

5. On the hearing, a party may appear in person or by an agent or attorney.

6. In conformity with this article, the Board may:

   a. Reverse or affirm, wholly or partially, or modify the order, requirement, decision or determination that is appealed.

   b. Make an appropriate order, requirement, decision or determination and for that purpose the Board has all of the powers of the Planning and Zoning Director.

K. APPEALS; SUPERIOR COURT

1. A person who is aggrieved or a taxpayer who is affected by a decision of a Board Adjustment, or a governing body of a political subdivision or a joint Airport Zoning Board that is of the opinion that a decision of a Board of Adjustment is invalid, may file a verified petition in the Superior Court setting forth that the decision is invalid, wholly or partially, and specifying the grounds. The petition shall be filed within thirty days (30) after the decision is filed in the office of the Board.

2. On presentation of the petition, the court may allow a writ of certiorari directed to the Board of Adjustment to review the decision of the Board. The allowance of the writ does not stay proceedings on the decision appealed from, but on application and on notice to the Board and on good cause shown, the court may grant injunctive relief.

3. The Board of Adjustment is not required to return the original record acted on. It is sufficient for the Board of Adjustment to return certified or sworn copies of the record or parts of the record as may be called for by the writ. The return shall concisely set forth other facts that are material to show the grounds of the decision appealed from and shall be verified.

4. The court has exclusive jurisdiction to:

   a. Affirm, modify or set aside the decision reviewed, wholly or partially.

   b. If necessary, order further proceedings by the Board of Adjustment.

   c. The court shall accept findings of fact by the Board as conclusive if they are supported by substantial evidence. The court shall not consider an objection to a decision of the Board unless the objection has been urged before the Board, or if it was not urged, unless there are reasonable grounds for failure to do so.

5. The court shall not allow costs against the Board of Adjustment unless it appears to the court that the Board of Adjustment acted with gross negligence, in bad faith or with malice in making the decision that is appealed.

6. In a case in which the court holds that airport zoning regulations adopted under this article, although generally reasonable, interfere with the use or enjoyment of particular structure or parcel of land to such an extent or are so onerous in their application to the structure or parcel of land as to constitute a taking of property in violation of the constitution.

L. VIOLATION; CLASSIFICATION.

A violation of this article or of a regulation, order or ruling made pursuant to this article is a class 3 misdemeanor. Each day a violation continues is a separate offense.

M. REMEDIES.

1. The political subdivision or agency adopting airport regulations under this article may institute in a court of competent jurisdiction an action to restrain, correct or abate a violation of this article, an airport zoning regulation adopted under this article or an order or ruling made in connection with the administration or enforcement of this article or the regulations.

2. The court shall award relief in an action brought under this section by injunction or otherwise as is proper to fully effectuate the purposes of this article and the regulations, orders and rulings made pursuant to this article.

N) IMPLEMENTATION

The Airport Zoning Inspector may adopt such procedures as are consistent with the purpose and intent of these Regulations for the implementation thereof.

SEC. 2408 AMENDMENTS

A) The permitted land uses within the Airport District Zones may be amended in accordance with the provisions of the Santa Cruz County Zoning and Development Code as necessary when in conformance with the purpose and intent of these Regulations whenever any of the following applies:

1) Evidence shows that the operation of the Airport has or will change substantially and that such changes will be permanent.

2) Additional information concerning the health hazards of high noise levels or accident potentials associated with aircraft operations becomes available.

3) New evidence is provided which indicates that modifications to any portion of the Airport District is appropriate.

4) When evidence shows that:

a) There are special circumstances or conditions applicable to the property referred to in the application which do not prevail on other property in that district, and that

b) The strict application of the regulations would cause an unnecessary hardship and that the granting of the application is necessary for the preservation and enjoyment of substantial existing property rights, and that

c) The granting of such application will not materially affect the health or safety of persons residing or working in the neighborhood and will not be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood.

B) Any owner or owners of property underlying the Airport District may petition for amendment of Airport District Zone boundaries and shall present studies and analysis accomplished by a competent engineer, architect or acoustical consultant which indicate that amendment to zone boundaries or building codes are appropriate.

C) Complaints alleging non-compliance with the provisions of this Article may be resolved through the conduct of a field test accomplished by a competent engineer, architect or acoustical consultant. When the field test confirms that non-compliance with the provisions of this article exist, the builder shall pay the cost of the field test and required structural modification. The complainant shall bear the costs of the test if the structure is in compliance.

SEC. 2409 NONCONFORMING RESIDENTIAL SUBDIVISIONS

A) Residential Subdivisions, as defined by the Arizona Revised Statutes and the Santa Cruz County Subdivision Regulations, which have been previously zoned residential and the subdivision plat recorded with the Santa Cruz County Recorder prior to the effective date of these Airport District Regulation Amendments, shall be allowed to develop in accordance with those Airport Regulations in effect at the time the final plat was recorded.

TABLE 24-1
RUNWAY APPROACH SURFACE CRITERIA

Runway Category	Width at Primary Surface	Slope	Width at 5,000 ft	Width at 10,00 ft
Visual	500 ft.	20 to 1	1,500 ft	N/A
Non-Precision Instrument	3,000 ft.	34 to 1	2,000 ft.	4,000 ft.
Precision Instrument	1,500 ft.	50 to 1	3,000 ft.	4,000 ft.

Precision Instrument runway approach surfaces extend beyond 10,000 ft. at a slope of 1:40 to a distance of 50,000 ft. and a width of 16,000 ft.

TABLE 24-2
HIGH HAZARD, INSTITUTIONAL AND EDUCATIONAL OCCUPANCY

A) High Hazard occupancy means that occupancy of land or premises, or the use of a building or structure, or of any portions thereof, that involves highly combustible, highly flammable, or explosive material, or which has inherent characteristics that constitute a special fire hazard, including among others:

1. Metal powder factories and warehouses
2. Cellulose, nitrate, plastic factories and warehouses
3. Cereal mills
4. Cotton gins
5. Distilleries
6. Explosive manufacture, sales and storage
7. Flour and Feed Mills
8. Gasoline bulk plants

9. Grain elevators
10. Lacquer factories
11. Liquefied petroleum gas charging or bulk storage plants
12. Mattress factories
13. Paint factories
14. Waste paper plants
15. Liquid fertilizer manufacture and storage

B) Institutional and Educational Occupancy means the occupancy or use of a building, or structure, or land, or any portion thereof for the purpose of receiving educational instruction, religious training or worship, or by persons harbored or detained to receive medical, charitable or other care or treatment, or by persons voluntarily or involuntary in group housing including among others:

1. Academies
2. Libraries
3. Schools
4. Colleges
5. Preschools
6. Universities
7. Asylums
8. Hospitals
9. Orphanages
10. Chapels
11. Houses of correction
12. Penal institutions

TABLE 24-3(1)
RESIDENTIAL USE RESTRICTIONS AND NOISE REDUCTION (NLR) REQUIREMENTS

Activities and Land Uses	65 to 70 dB	70 to 75 dB	75 + dB
Residential-Low Density not to exceed the residential density permitted under GR of Article 9, Section 901	NLR 25+ Footnote A and B	NLR 30+ Footnote A and B	N
Residential-Medium Density not to exceed the residential density permitted under R-2 of Article 9, Section 931	N	N	N
Residential-High Density not to exceed the residential density permitted under MF of Article 9, Section 971	N	N	N
Recreational Vehicles Parks	N	N	N
Mobile Homes Manufactured Homes	N	N	N

N - Land Use Not Permitted
NLR - Noise Level Reduction Decibel

*A. The property owner must record an avigation easement on the property.

*B. The property owner is required to give tenants written notification that they are going to be residing in the 65 to 70 db Airport Noise Zone.

1. A NLR of 25 dB must be incorporated into design and construction of the buildings or structures where the public is received, office areas are located and where the normal interior noise level is low.

2. A NLR of 30 dB must be incorporated into the design and construction of those buildings or structures where public is received, office areas are located and where the normal interior nose level is low.

TABLE 24-3 (2)
COMMERCIAL/INDUSTRIAL USE RESTRICTIONS AND NOISE REDUCTION (NLR) REQUIREMENTS

Activities and Land Uses	65 to 70 dB	70 to 75 dB	75 + dB
Institutional Facilities	N	N	N
Commercial-Office, professional, business	P	NLR 30	N
Commercial-Restaurant, bar motel	P	NLR 30	N
Commercial-Retail, general merchandise	P	NLR 25	N
Indoor Auditorium-Assembly	P	NLR 30	N
Industrial	P	NLR 25 (1)	N

P-- Permitted with Conventional Construction
N – Land Use Not Permitted
NLR – Noise Level Reduction Decibel

1. A NLR of 25 dB must be incorporated into design and construction of the buildings or structures where the public is received, office areas are located and where the normal interior noise level is low.

2. A NLR of 30 dB must be incorporated into the design and construction of those buildings or structures where public is received, office areas are located and where the normal interior nose level is low.

APPROVED AND ADOPTED THIS 7th DAY OF July 1998

Ronald R. Morriss, Chairman

Robert Rojas, Vice-Chairman

Robert Damon, Supervisor

ATTEST:

Melinda Meek
Clerk of the Board

APPROVED AS TO FORM:

Ms. Martha S. Chase
County Attorney

AIRPORT ENVIRONS PLAN AREA MAP